

# American FORESTS



MAY 1933

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# "I'll call you up!"



A HUSBAND bids his wife good-bye as he leaves in the morning. "I'll call you up," he says reassuringly.

A guest leaves after a pleasant week-end. "I'll call you up," she tells her hostess. An executive sits at his desk handling varied business matters, large and small. "I'll call you up," he answers many times in the course of a busy day.

"I'll call you up" is a phrase that has become part of our language and part of our modern security.

Beneath the surface meaning of the words is something more than a casual promise to maintain contact. It is a phrase of confidence and a phrase of friendship. Implied in it is a nearness to everything and everybody.

The familiar gesture of lifting the telephone receiver holds boundless possibilities. It may avert a danger, end an anxiety, solve a dilemma, insure an order. Or it may be for some trivial pleasant purpose—a jest to be shared, a greeting to be spoken.

Over the telephone speed the thoughts and ideas that change destiny, bring new hope to the wondering and greater achievement to the ambitious. Over the telephone come the "Yes" and "No," the "I'll be there" and the "Come at once" that signify decision and create action.

Think what this world would be like if you could not telephone so easily to so many people. No friend or place is ever far away when you can say—"I'll call you up."

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# AMERICAN FORESTS

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# THE WORK OF THE CONSERVATION CORPS IN BUILDING MEN AND FORESTS



President Roosevelt's plan for unemployment relief through the performance of useful work in the forests will render a far-reaching service to men and country alike. To thousands it will mean valuable training in useful, healthful work, physically beneficial and morally uplifting, while providing work much needed for the rehabilitation and improvement of forest resources. The above pictures illustrate some of the types of work the conservation corps will perform: (1) Construction of telephone lines for fire protection, (2) forest insect control, and (3) the development of roads and trails for the protection and administration of forest areas.

# AMERICAN FORESTS

Vol. 39

MAY, 1933

No. 5

## THAT 250,000-MAN JOB

By R. Y. STUART, Chief Forester

U. S. Forest Service

THE passage of President Roosevelt's unemployment relief bill affords the opportunity of putting 250,000 men promptly to work. In view of the prominent part our forests have played in the economic life of the American people, it is especially fitting that in the present economic crisis we should turn to those forests as a source of work with which to employ in healthful occupation our large number of idle men.

President Roosevelt decided upon work in the forests as the first form of employment in his relief program, largely because of the unusual opportunities it offers to men from all walks of life to take a fresh start in a healthful occupation in the open. While the work which will be accomplished is much needed and will be largely self-liquidating, the primary object of the plan is to put men to work immediately. To quote from President Roosevelt's message, "more important, however, than the material gains will be the moral and spiritual value of such work. The overwhelming majority of men who are walking the streets and receiving private or public relief, would infinitely prefer to work. We can take a vast army of these unemployed out into healthful surroundings. We can eliminate to some extent at least the threat that enforced idleness brings to spiritual and moral stability. It is not a panacea for all

the unemployment but it is an essential step in this emergency."

The plan, broadly stated, calls for putting into effect a wide spread program for unemployment relief through the performance of useful work in the forests. As those of us who will carry it out envision it, its effects will be far-reaching. It will help to lighten the burden of local relief agencies; it will provide a stimulus to business through the increase of purchasing power and the supplying of wholesome food and necessary equipment for the thousands of forest workers. At the same time it will be accomplishing some enormously important public work much needed for the rehabilitation and improvement of our forest resources. It will be building for future national wealth. The labor performed in the forests will render a vital public service by helping to put the forests of the country in a productive condition which would have taken years to attain under ordinary circumstances.

Large numbers of men throughout the country will be given a better understanding of land uses, of restoration and protection of land values, and of the possibilities for building up the country's natural resources. All recesses of this country will be entered by these men who will know their "America First." For many, it may lead to new, permanent occupations in fields of public usefulness.

And beyond all that, the



With 25,000 unemployed men already in conditioning camps, preparatory to work in the forests, camps similar to the one pictured above are rising in many forest regions. In these comfortable and healthful tent cities, equipped to take care of as many as two hundred men and more, the conservation corps will be quartered.

forest work program will render far-reaching service to the men. To thousands of men it should mean valuable training in useful, healthful work, physically beneficial and morally uplifting. To thousands of men it will mean a chance to get away from discouragement and distress, to face the world with a renewed purpose.

The details of just how the plan will be put into effect are being worked out as this is written, but the primary lines of action have been decided upon. The administration of the Act will be by a director of Emergency Conservation Work, Robert Fechner, acting for the President. Funds will be allotted to the Federal departments concerned with the execution of the projects. The Department of Labor will enroll the men for work. They will then be transported to assembly camps maintained and operated by the Army and will be furnished with food, shoes, clothing, and necessary medical attention. After "conditioning" at these camps they will be sent to the forest work camps from which the forest work to be done is to be manned.

Enrollment will be for a period of six months, but the period of employment can be terminated upon the request of the employee for good cause. The government will dismiss any employee who shows inability or unwillingness to do reasonably satisfactory work for which he is suitable or may be trained, or for failure to comply with the reasonable rules and regulations prescribed by those in charge. Men sick or injured while on the job will be cared for at Government expense. The relief allowance will be at a monthly rate of \$30. Arrangements are made at the time of enrollment to have a portion of the compensation due paid direct to dependents. Except for emergency work to prevent the destruction of life or property, the hours of work will not exceed forty a week. In emergencies the men will be subject to call for forest fire-fighting. As with all other forest work, any fire-fighting work done will be under the direct supervision of experienced men who are thoroughly qualified to look after the safety of the men in their charge.

Every effort will be made to obtain the necessary personnel for supervision and technical direction from the enrolled force. When it cannot be obtained from that source it will be supplied from the ranks of foresters and other forest workers of proven experience and ability to supervise the type of operations undertaken.

The whole project is primarily a relief measure and in taking advantage of it any man should be willing to serve to the best of his ability in any capacity. It is expected that just as rapidly as the need for relief dissipates and the opportunity offers, men will leave the camps, take their place in the field of commercial occupation for which they are best suited or capable of filling, and give way to those less fortunate.

At this writing a first contingent of 25,000 men is being assembled from sixteen cities. Members of this first unit, selected by the Labor Department, are men with dependents, between the age limits of eighteen to twenty-five, unmarried, physically fit, and with the expressed willingness to assign a major portion of their compensation to their dependents. The work on the forests will be of such variety that any man of reasonable physical fitness should be able with some training to give a satisfactory account of himself.

Supervision of the work on Federal lands will be given by the Department having jurisdiction over the lands. Work on National Forests will be directed by the Forest Service, Department of Agriculture, and on National Parks and Indian Reservations by the Department of Interior. Work on state, county, municipal and private forests will be supervised, in most instances, by the states. No distinction will be made in the scope of the work done on National and



Work on the National Forests has already been planned in furtherance of an established program, which will provide more than 1,600,000 man months of work. One of many activities is that of tree planting on lands devastated by repeated forest fires, of which there are more than 2,000,000 acres in the National Forests alone.

State Forests. Some of the activities contemplated on the National Forests are the construction of telephone lines, fire breaks, fire protection structures, administrative structures, public camps, range fences, water development and truck and foot trails. In connection with those activities directly related to the growing of trees there will be forest planting, timber stand improvement, insect and blister rust control. Work on the National Forests has already been planned which could provide more than a million and a half man months of work that needs to be done and would be done sooner or later. No projects are included in these plans which would be classed as "make-work." All of the work is in furtherance of an established National Forest improvement program looking to the development and protection of vital public resources.

The Act limits the character of work which can be done on county, municipal or private forests to such kinds of cooperative work as are now provided for by Acts of Con-

gress in preventing and controlling forest fires and the attacks of forest tree pests and diseases and such work as is necessary in the public interest to control floods. Among these authorized activities will be the construction of fire breaks and improvements for strictly fire protection purposes, assignment of men to fire prevention and fire suppression work, and to assist in practical measures for the control of tree diseases and insects and of floods.

Plans are already under way to provide feeding and housing facilities for the men who will work on the National Forests. By the time the men have been assembled, equipped and "conditioned," camps convenient to the work to be done will have been established and be ready to take care of the men as rapidly as they are needed. The work camps will be equipped to take care of groups of men up to 200 in number, and will be maintained in an orderly and sanitary way. Constructed by the Army, these camps will also come under Army maintenance. Commanding officers of the vari-



In New England, the Lake States and the West, one important activity will be the control of the blister rust disease which threatens to wipe out the nation's valuable forests of white pine. Currant and gooseberry bushes, alternate host to the disease, must be eradicated.

ous Army Corps Areas have been ordered to assign officers to the camps and to arrange for their supply, administration, sanitation, welfare, medical care and hospitalization. The order authorizes the drawing on the Army Reserve Corps, in necessary cases, to carry out the plan. As set up at this time, it is planned that each forest camp be supplied with three line officers.

Actual work projects and their technical planning and execution will, as proposed at the beginning, be under the immediate control and supervision of the Forest Service on the National Forests, the various state forest or conservation agencies on state forest lands, the National Park Service on National Parks and National Monuments, and other federal departments concerned in the work. The Army will be assisted by the Red Cross and other organizations in carrying out active welfare work.

The first fifty camps to be approved are in the eastern National Forests and affect thirteen states. They are located as follows: Alabama, one camp; Arkansas, four camps; Georgia, one camp; Maine, one camp; New Hampshire, three camps; North Carolina, six camps; Oklahoma, one camp; Pennsylvania, five camps; South Carolina, one camp; Tennessee, five camps; Vermont, one camp; Virginia, ten camps; and West Virginia, five camps. As soon as feasible, camps will be established on the western National Forests and in a large number of state forests.

There is no reason to believe that any man cannot be perfectly comfortable in one of these camps, even though he be city bred. With the variety of work needed to be done on the National Forests it is reasonable to expect that many of the men can be placed in types of employment suited to their abilities or that they can adapt themselves through training and practice to the necessary requirements of the jobs to which they may be assigned. There will be need for a wide variety of skill, such as carpenters, cooks, pick and shovel men, teamsters, powder-men, farriers, ax-men, tractor drivers, woodsmen and others. Surely most of the men given this relief, if they be sincere, can fit into one of the available occupations.



In emergencies the conservation corps will be subject to call for fighting forest fires—under the direct supervision of highly trained and experienced leaders.



The weird and ghostly appearance of Dead Lake on the Apalachicola—created by the silting and damming up of the Chipola channel.

*A great many people can picture gullied hills, for they are by no means uncommon. The same may be said about the part gully erosion plays in shoaling harbors. The bill that the public pays for the dredging of harbors and of channels through bars at river mouths is a very big one. But what goes on between the eroding hills and the shoaling harbors and channels is altogether another picture. Few people know what this outwashed soil does when it is deposited in the flood plains before it reaches the sea.*

*Consider the case of the Apalachicola River, and its lower-most considerable tributary, the Chipola River. The Apalachicola is formed by the confluence, at the southwest corner of Georgia,*

## BETWEEN THE HILLS AND THE SEA

By  
JAMES G. NEEDHAM

*of two other rivers, the Flint and the Chattahoochee. The Flint rises in North Carolina and traverses the State of Georgia diagonally its entire length. The Chattahoochee rises in Tennessee and forms part of the Alabama-Georgia boundary. Both streams are always muddy. In flood time their burden of silt is enormously increased. They both transport the washings from Georgia gullies downward toward the sea.*

*In the upper half of its course the Apalachicola River has sufficient current to carry sand even at moderate stages. Long bars of shifting yellow sands border this part of its course. On its eastern bank bluffs of considerable height arise for a distance below Camp Torreya, the biological field station of the University of Florida. Its burden of silt is carried farther down to the lower reaches where the country flattens out and the current slackens. There it is deposited in the channel, forming shoals. In flood time it is spread all over the adjacent over-flowed swampy woodlands, slowly building the front lands higher. The extent of this filling is shown by the position on the tree trunks of the "blazes" made by the early surveyors. Though these ax-scars were doubtless made at a convenient height of from three to five feet, in places they can*



The Chipola River, above Chipola Lake, is always a clear flowing stream.

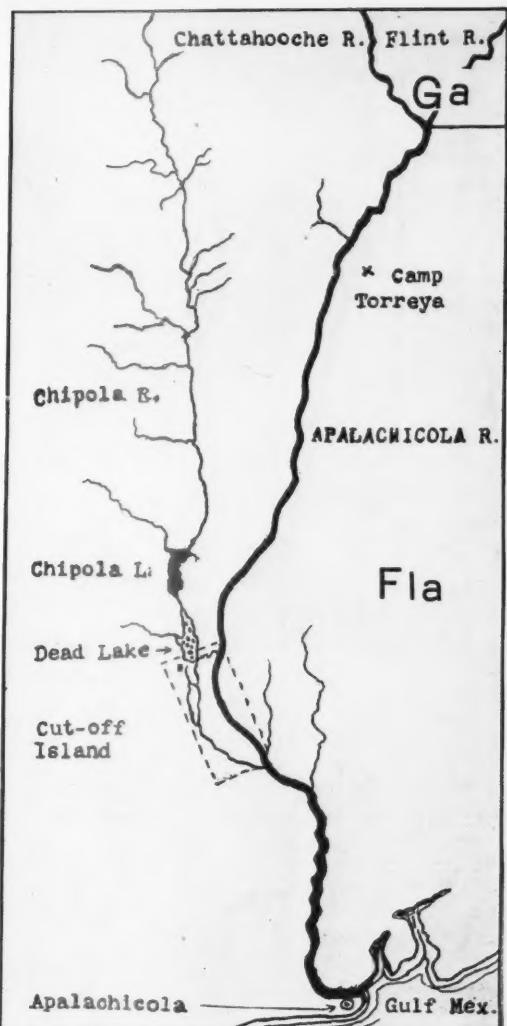
# EROSION'S PROCESSES IN GEORGIA GULLIES AND FLORIDA SWAMPS

now be found only by digging away the soil and looking down beneath its surface.

This filling has been done gradually, in successive seasons of floods, and on the drier frontlands the trees have been able to adjust their root systems to it. In the lower lying backlands swampy conditions have been made more permanent, and the trees in vast areas have been drowned.

Flowing water follows the lines of least resistance. The Apalachicola River has so filled its lower channel that much of its water has found an easier path through a cut-off into Chipola River, an adjacent, low-lying, tributary stream. This cut-off is a dozen or so of miles above the mouth of the Chipola. River steam-boats now follow the very circuitous cut-off route, thus avoiding the shoals in the large river.

Along with the water of the main river, the cut-off carries also the silt; and the deposition of this silt in the Chipola channel and lowlands has resulted in the damming up of the waters of that river and the formation of the so-called Dead Lakes. Here are many square miles of drowned cypress timber standing in shallow water. I have traversed this area for hours in a small motor-boat,



The Apalachicola, from the confluence to the Gulf.



A steamboat following the narrow and tortuous cut-off channel through the lower Chipola.

following the old winding river channel most of the way, with no green trees appearing anywhere except on approach to higher ground. The aspect of this drowned forest is almost ghostly.

The filling of valleys and lowlands with the outwash from the hills goes on, of course, under natural conditions. A little farther upstream on the Chipola River is a natural open-water lake that was probably formed by the same processes more slowly operating in ages past, while the Georgia hills were yet covered with woods. The clearing of the hills and consequent washing away of their soil has so enormously hastened the filling that the result as seen in Dead Lake is startling. This is the other end of the story of erosion.



Voyageurs of the night—flying through the brilliant moonlight.

© Cleveland P. Grant

## NATURE IN THE MOONLIGHT

By ARCHIBALD RUTLEDGE

THE world of nature that awakens at twilight is another world—a dewy domain, a starlit country; and in it I have discovered fairies. Creation is of darkness as well as of light. To me, since earliest boyhood days, there has been a magic and a mystery about the life of nature at night that has always had a deeper charm than what we observe in the obvious daytime. Then it is that fragrant shadows form a glamourous background, and are as veils marginal to sidereal loveliness. Then starlight spangles earth's beauty; then it is that far musical voices haunt the purple night. And it is then that many of the warier and more beautiful wild things come forth to roam the velvet lands of darkness.

It was early in March, a time of the year when the great coastal country of the Carolinas is beginning beautifully to respond to all the sumptuous purpose of the spring. Leaving the plantation landing long before daybreak, while the full moon was yet high above the sleeping oaks and pines, I paddled alone down Warsaw Creek, misty and wan in the moonshine, and so out into the pale luminance of the Santee River. A breathless hush was over the world, a tranced stillness that seemed expectant of a miracle. The great river flowed soundless out of mystery into mystery—out of the mouldering cypress swamp to the northward, toward the tremendous delta country to the southward, and thence into the lordly Atlantic. Thousands of stars were mirrored in the river's ample bosom; there was a communion as deep as love between the river and the sky.

My purpose in coming into this primeval loneliness at night was to watch the gathering on the river of the mighty hosts of wild ducks, on the eve of their departure for their summer homes in the far North. I had come to watch

fairies in the moonlight. To these beautiful children of nature the almighty voice of love had begun importunately to call; to the very heart of life itself it called, and they heard it, and would obey.

I paddled to a tiny island in the very centre of the river, and there, hiding my canoe in the marsh, I went ashore and climbed into a low fork of a cypress, from which vantage point I had a commanding view up the glimmering tide. I knew from previous observations that just before daybreak these ducks, leaving their feeding grounds in the old abandoned ricefields of the delta, would congregate on the river about a half-mile above my island, and then, in a vast and festive concourse, would drift downward on the lambent waters toward the sunrise. Almost as soon as I had settled myself, I heard a flock of mallards pass overhead, the thin sweet music of their wings in harmony with the primal quiet of the scene. It is almost impossible to see these voyageurs of the night, flying birds, except at certain rare angles in the brilliant moonlight. Coming down out of the hidden swamp I heard flocks of wood-ducks—the eerie musical cries easily distinguishing them. Few of them migrate, but they seemed to want to join the gathering hosts. The moon now was nearing the crests of the great pines to the westward; its sad and beautiful light flooded the old plantations, the dreaming river, the solitary delta. In such beamy silver radiance there is no bush or tree or clod, however obscure and unknown by daylight, but to virginal marble is wrought. In lily-white stone it is tenderly statued.

And now the silvery heavens were alive with joyous wings, joyous cries; and I could hear the soft splashing of the ducks as they alighted on the water. Soon the first of them

began to come into sight, sporting on the gleaming tide. In their gorgeous nuptial plumage they drifted idly, alert yet serene, with that indefinable air of highborn elegance that every true game bird displays. In the moonlight I could not distinguish their colors; they all looked black on the silvery waters; and only by their size and by certain characteristic attitudes could I distinguish the different species. Now the moon burned softly into the pinecrests; and now the great river, for as far as I could see, was black with ducks—a living raft that drifted delightedly down the still tide. There could not have been fewer than ten thousand ducks in that splendid company; and I knew that I, in these modern days, was viewing a scene such as must have been common to the Santee and the Sewee Indians, who roamed that region before the coming of Columbus to the New World. Past my little island in pairs, in tiny groups, in great communal gatherings drifted these fairies in the moonlight. Not one seemed solitary. They dove, they splashed, they rose partly out of the water and flapped their wings in an ecstasy of happy relaxation. The glint of some sheen of plumage I could occasionally catch as they turned in the moonlight. Subdued, and yet excited converse, I caught, as if they were well aware of the momentous journey soon to be performed, and of the meaning of the mysterious joy that stirred every heart. And now the moon was down behind the forest. The morning star throbbed resplendent above it. The east was whitening; its dark amethyst had turned to pearl; now momentarily it became azalea; and soon it would be rose. The magic moonlight was no more. My fairies of the silver light were now wild ducks—but not less beautiful, if less mysterious. So the purple night had passed, and I had been privileged to share a part of that beauty.

While I had gone far to see those mallards, widgeons, teal, and wood-ducks, the darkness brings magic to our very doors. A house-wren had made her nest in a little box on my front porch. Naturally, she was in a perfect ecstasy of joy over this whole matter of rearing a family. At the time of this incident the babies had just been born, and I was surprised one day to see her pause on the perch beside the box and give an exquisite trill, even though she had a tiny moth in her bill at the time. At about three o'clock one

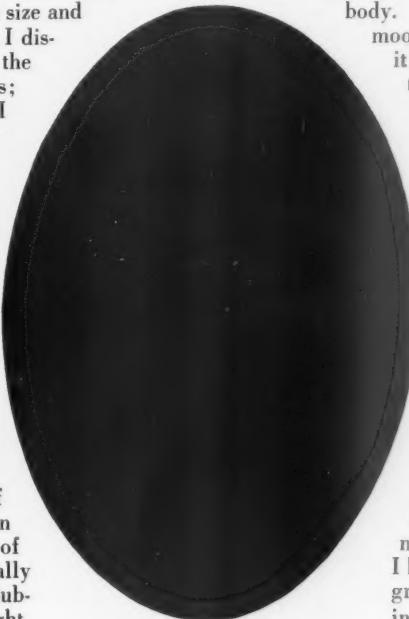
morning I got up to go fishing. When I turned on the light on the porch, the wren darted out of her box, as if she had been caught oversleeping. Alighting on an electric wire in

the moonlight she poured forth her ecstatic song, with an earnestness of artistic effort that shook her tiny body. I left the little brownie singing in the moonlight.

There are certain birds that make it a practice to sing at night; and while in this respect the mockingbird and the nightingale are unrivaled, I consider the field-sparrow almost as interesting. On several occasions I have heard robins give little April-twilight flutings "in the dead vast and middle of the night," but I think these birds were singing in their dreams. I never go out on a moonlight night in spring or summer without hearing the field-sparrow; and I became so curious to know just whether his elfin serenade was common or not that I purposely crept up on one in order to discover where he was when he sang. Coming home very late from a trip into the mountains, I stopped my car beside a wild meadow where I had often before heard field-sparrows sing at night. After a few moments of listening I heard one trilling not far off from a little group of sumac bushes, which were wearing a delicate mantilla of night-mist. Keeping a weeping-limbed scarlet oak between me and the sumacs, I softly approached within twenty feet of them. Opening an aperture between the boughs, I peered

forth. At first I saw nothing but the sleeping moonlit bushes; then the top of one bush stirred slightly, and I saw the bird hop on the topmost spray. Three times he gave his quivering evanescent note, when he promptly hopped down amid the dewy foliage. I lingered under the oak in the moonlight, there in the shimmering meadowland, loving it all, and worshiping the Creator for His great gift of beauty to us. Presently the little serenader stole forth again—a silver bird on a silver spray, and his song was like the far-off tinkling of fairy silver bells. I was glad to discover that he sang consciously, and from a heart so full of the music of joy that it would not let him sleep.

When I was a boy, we experimented with raising tobacco on our plantation, and erected, at an intersection of the various fields, a shed for curing it. It is necessary for the temperature to be kept constant, and the bundles of leaves hung up to dry must be occasionally shifted to prevent moulding.



The silvery heavens were alive with shadowy wings.



The moonlit river was black with ducks—a living raft drifting down the still tide.

Some one had to be on guard, as it were, all night over a period of about three weeks, the temperature in the drying-house being regulated during this period by the opening and closing of windows. Every other night, for a space of about six hours, I took my turn as watchman.

It was in August when what I shall try to describe occurred, and the moon was full. To the south of the shed was a big field sown to cowpeas; here and there in this area stood majestic live-oaks. Beyond was the darksome pine forest, always mysterious, but on a moonlight night especially so, tinged with a nameless glamour. After I had made my round of the racks of tobacco-leaves, I would sit in one of the low windows of the drying-house, looking out on the moon-blanchéd field, listening to the soft voices of the night—the owls, the dim oaks' oracles; the pines chanting their vespers; the far cries of wood-ducks in the lagoons on the brink of the forest. Being young, I then dreamed great dreams.

Several times I saw small herds of wild deer come into the peafield to feed. In deer-country if this crop is planted in rows, the deer may destroy the entire crop, going about the matter systematically, row by row. But if the seed is broadcast, the growth is denser, the running vines root in many places, and the damage done by the deer is materially less. Most of the deer I had seen in the field at night had been a good way off—shadowy shapes, now visible, now vanishing. It is surprising how very difficult it is to watch a deer by moonlight. As he moves about in that argent radiance, as the mystic light touches him at different angles, now he looks black, now silver, now he is lost, now found again. As nature lays a camouflage of beauty over the whole world, so it camouflages the wild things that walk by night.

One morning about two o'clock, when the full moon had crossed the zenith but was riding brilliant and fair, raining down an almost insufferable ecstasy of peace, as I was sitting in the drying-house window, I heard a little sound in the peafield off to my right, and very near. It was a doe, and she was coming closer to me with every delicate step. If a deer does not get the scent of a man, and if the man does not move, the wild thing may come within a few feet of him; and I have not observed that a deer objects to coming near a

building. Flowering shrubs such as azaleas planted beside the very walls of plantation houses often suffer from the depredations of these nocturnal visitors.

While my fairy friend had evidently come into the field to feed, she had a preoccupied air, as if her attention was divided. But it was not until she came almost opposite me, at a distance of about twenty-five feet, that I discovered the cause for her unusual behavior. Instead of feeding greedily like most deer, she seemed more intent on looking and listening; and often she paused to gaze back. Between me and a great oak she stopped, and to my amazement she bleated

softly; deer are among the most silent of nature's children. Then I heard what is assuredly one of the tenderest and most appealing sounds of all the natural world—the bleating of a little fawn. I looked, and there in the moonlight were two of them—twins; and now they ran up and stood side by side between the mother and me. She uttered a little motherly sound, muzzled each one gently, and then began to feed on the succulent peavines. But the fawns knew only their mother's breast as a source of nourishment. They therefore began to frolic in the moonlit field, making little prances, darting round their serene mother, chasing each other in tiny circles. Here, indeed, were fairies in the moonlight, elves out of the land of dreams.

It has been my observation that during the day a doe will leave her fawn in a grassy bed, and that he will stay there until she returns. But during the hours of darkness the mother evidently thinks it safer to keep her darling with her.

One November twilight, on the fragrant borders of Montgomery Branch, one of my plantation's favorite deer-haunts, I had lingered late to watch the wild life of the place. A movement in the myrtle bushes attracted my attention. A doe came forth palpably into the rosy afterglow that suffused the wide forest. Quite evidently she was in flight; but her running, her pausing, her dodging partook of the nature of a game of hide-and-seek. Often she looked back, as if she did not really care to lose her pursuer. Once I saw her champ delicate branch, in delighted excitement rather than in fear—for no hunted deer will pause to browse. I marveled at the maziness of the trail she left, at the evident anticipation that she displayed that she would be



Nature's life at night has a deep, mysterious charm. Fragrant shadows beckon, musical voices haunt the tranced stillness of the swamp, and the great river flows silently on.

overtaken. Her escape was feigned, for she took good care as a fugitive not to lose her pursuer.

Ere long this pursuer came on her track. I think he winded me; but to the dread scent of man he hardly deigned to pay the slightest notice. True on the meandering trail he ran, now with his proud head low, now high, seeming to realize that the difficulty he was having, accountable as being merely love's shadowy avoidance, was but temporary, and in its way delectable. Once I heard him suspirre a manful baffled snort, as if he were saying, "Well! And where in the world has she gone now?"

Watching creatures such as these deer at night I have come to believe that the ancients created their mythology out of matters more substantial than mere imagination. In the evening and morning twilights, and by the light of the moon, did

they not see wild children of nature, and thus have suggested the nymphs and the dryads, the gnomes and the sprites, the elves and the fairies? Perhaps they took these dimly discerned creatures and made of them a whole system of romantic legend. On one occa-

sion it was my good fortune to find a hummingbird's nest on the very tip of a bare pine limb that hung about ten feet above a little woodsy trail. Looking from the main road down the trail, one could see it clearly against a patch of sky beyond. About nine o'clock one evening in May, when the moon was at her old magic of making a fairyland of all the world, I sauntered down the road; and, when opposite the trail, I glanced at the tiny bassinet on the tip of the bare pine-bough. The light must have been striking in a manner peculiarly favorable to vision, for I could see the elfin mother on her nest. While watching her for a moment, I became aware of a tiny blur beyond her, crossing and recrossing, like the rhythmic tip of pendulum, the bare space of sky against which the nest was etched. Walking a few steps nearer, I was able to see the male hummingbird swaying back and forth in enigmatic flight in front of his mate, entertaining her, serenading her by a flight instead of by a song. Love is a lyric thing, and has many forms of expression. I do not recall ever having seen one more delicate and yet adequate, more elfin yet all-comprehending than that of this fairy in the moonlight doing

homage to his fairy sweetheart. It is probably not often that the rubythroat thus flies at night. In this case, it was just after twilight, on a witching evening, and I was fortunate. Denied the gift of song, this charming Romeo of the fairy world found a way to express his devotion.

One cannot be too strongly impressed, as he studies the courtship and the mating of wild creatures, with their subtle, original, and individual behavior. Their courtships especially are often very beautiful, having far more of a psychic than a physical element in them, having also, of their kind, rites, a ritual, and a ceremoniousness highly poetical — in deep contrast, it may be added, to some of our love-making.

One evening in the late spring, on the borders of the goldfish ponds where grew marsh, water-plantains and cattails,

I watched a pair of grebes courting. To learn the art of coyness, those who feel the need of it should watch a female grebe keeping her lover in an agony of doubt. It seems the law in the natural world that it is the male who is called upon to display his charms. In this case

Instead of feeding, she seemed more intent on looking and listening. Then I heard the tenderest and most appealing sound of all the natural world—the bleating of a little fawn. I looked and there in the moonlight were two of them—twins!



the shy little hen, with her undetermined bright eyes, would sit, partly hidden in the moonlight by the green waterweeds, patiently and appraisingly watching her lover's attempts to prove his prowess, his originality, and his devotion.

Essentially a water-bird, this male began his performance by proving that he was as good on shore as he was in his natural element. All glistening silver, he somewhat awkwardly climbed the low green bank; then, facing his sweetheart, he took a stance, gently swaying from side to side, as if he were doing setting-up exercises. Then he wagged his body as if an electric vibrator were wagging it for him. Then, with his short tufted tail straight up, and his wings horizontal, he took a few steps forward, as if beginning a ballet. He turned his wings forward and ruffled his neck feathers as if he were threatening a rival. Next he executed a kind of "ghost" dive into the pond, an entirely artificial affair. He stayed under a long time, craftily coming up at last close to the coy maiden of his dreams. But she was not yet wholly convinced. Then occurred what seemed to me an extraordinary and touching demonstration (Continuing on page 238)

# FOREST SITUATION EXPOSED

**Exhaustive Report by Forest Service to Congress Lays Forest Troubles to Private Ownership of Land. Huge Program of Public Ownership is Proposed.**

By OVID BUTLER

**I**N A REPORT transmitted to Congress by Secretary of Agriculture Henry A. Wallace on March 29, the forest situation in the United States is given the most thorough and comprehensive exposure in the history of American forestry. The report embraces over three thousand typewritten pages and includes recommendations for a national program of forest land action that in point of magnitude dwarfs all past efforts or proposals of federal, state and private agencies. The document is a call to the nation to heed what it terms a critical breakdown of forest land management by private owners, and to embark upon a gigantic program of public forests.

Prepared by the United States Forest Service in response to a resolution introduced by Senator Royal S. Copeland of New York, and passed by the 72d Congress on March 10, 1932, the report is the work of a large number of experts who spent months delving into every important phase of the forest question. The letter transmitting the report to Congress bore the signatures of both Secretary Wallace and Assistant Secretary Tugwell, and declared that the inquiry has revealed more clearly than ever before that the forest problem is one of the largest the American people has ever faced and one of the most urgent now demanding attention. "The public policy of passing excessive areas of forest land to private ownership," the letter stated, "and the private cut-out-and-get-out policy, has wrecked or seriously reduced the productivity of the land, made it difficult or impossible to pay taxes, and hence has led to tax reversion so large in several forest regions as to constitute virtually a breakdown of private ownership." Throughout, the findings of the report are a severe indictment of private ownership of forest land in the United States. To private ownership the report attributes most of the country's forest troubles today in that it is held to be the primary source of forest devastation and land mis-management. "The over-load of forest land and timber in private ownership," declared Secretary Wallace in his letter of transmittal, "and the cut-out-and-get-out policy have led to excessively large capital investments in manufacturing plants, high capital charges, pressure to liquidate, over-production, demoralized prices, waste of the raw prod-

uct and large financial losses to the forest industries. \* \* \* Transient forest industries resulting from the conditions described have caused far-reaching and utterly demoralizing economic and social losses to dependent industries, to local communities and to entire forest regions. The full effect and far-reaching character of such losses has been but little appreciated." Private ownership, the report holds, is the limiting factor in forest reconstruction in that four-fifths of the timber growing lands of the United States are privately owned. As a rule, these are the best lands for producing forests and, therefore, possess ninety per cent, or more, of the possible growing capacity of the country. The universal tendency, however, of the private owner, the report points out, is to cut his timber without regard to future growth of the forest or productivity of the land. The result is to be seen in the millions of acres of cut-over, burned-over, and devastated lands in all parts of the country. Ninety per cent of the total area of such lands, the report states, are privately owned, and ninety-five per cent of current devastation is taking place on lands in private ownership. Forest deterioration, which is far more extensive and hence more serious than devastation, the report states, results from cutting without regard for the future productivity of the forest, or from forest fires, or from the two combined. More than ninety-nine per cent

## HIGH POINTS OF FOREST PROGRAM

- (1) An increase of 224,000,000 acres in public forests, bringing the total public holdings in the United States to 400,000,000 acres.
- (2) Of this increase, 177,000,000 acres to be acquired in the East and 47,000,000 acres in the West.
- (3) The extension of fire protection to 191,000,000 acres not now protected and strengthening protection on 321,000,000 acres now given some protection.
- (4) The planting of 25,000,000 acres during the next twenty years.
- (5) The application of intensive forest management to 100,000,000 acres during the next few decades and of extensive forest management to some 300,000,000 acres addition.
- (6) Enlargement of federal aid to states and private owners.
- (7) Limited public control of cutting on private lands.

of such cutting and ninety-eight per cent of the area burned-over annually is under private ownership.

Convinced that reliance upon private ownership of forest land has clearly failed to assure forest welfare and social and economic stability, the report declares that the forest situation confronting the nation today calls for national planning in a large way. It outlines and urges immediate action upon a national and state program of forest land reconstruction that will make adequate provision for the country's future needs for wood, watershed protection, outdoor recreation, preservation of wild life, productive forest ranges, and forest research. The central feature of this program looks to the acquisition by the states and the Federal Government of public forests aggregating 224,000,000 acres in addition to the area already held in public ownership. Completion of the program would place under public

forest management a total of 400,000,000 acres. States and their local sub-divisions, the report declares, should take over as much of this acquisition program as their resources permit. This is estimated at 90,000,000 acres, leaving 134,000,000 acres for the Federal Government to acquire. Among the more outstanding findings of the inquiry are the following:

The situation in respect to forest lands instead of growing better is going from bad to worse in that devastation by fire, insects, private cutting and mis-management is outstripping re-growth, contributing to land degeneracy and undermining the social and economic welfare of the country.

The forest lands of the United States swelled within recent years by fifty million acres of abandoned agricultural land today constitute over one-third of the land surface of the country. They exceed by 120,000,000 acres the entire area embraced within all the states east of the Mississippi River. They exceed the combined area of France, Germany, Norway, Sweden, Spain and Italy.

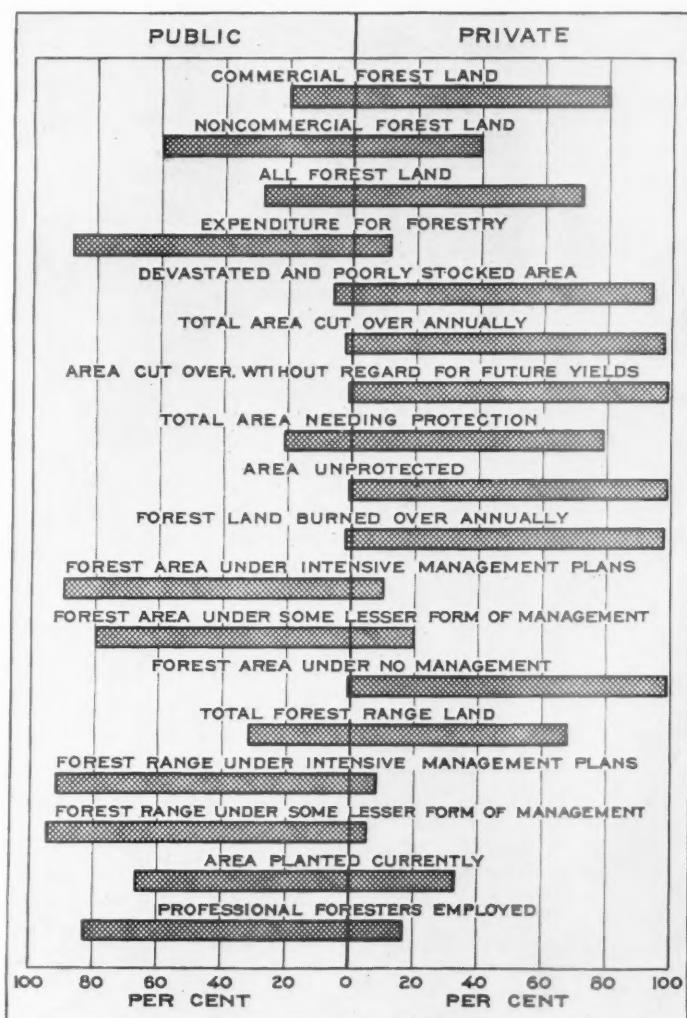
The total acreage represented by this vast domain of forest lands is 670,000,000 acres, 80 per cent of which is in private ownership. The condition of the lands ranges from a complete state of devastation and soil disintegration through varying stages of regrowth to uncut areas of virgin timber. Most of the uncut or old growth forests are in the far West. Virtually all the forest lands in the East have been cut-over.

Remaining forests are being cut at the rate of 10,000,000 acres a year, and ninety-eight per cent of the area is privately owned. Only about five per cent of the private cutting is done with any conscious regard to the future productivity of the forest or the land. Practically all of the 191,000,000 acres of forest land not receiving fire protection today is in private ownership, and of the total area burned over annually in the United States ninety-eight per cent is privately owned. The largest contribution of the private owners to perpetuation of forest growth is in fire

protection. Here their contributions have ranged in recent years from one-fourth to one-sixth of the total cost of organized protection of private and state lands. The total acreage in the United States, including private and public lands, which has been brought under more or less intensive organized forest fire protection amounts to 321,000,000 acres, or about one-half the total area available for forestry. The total cost of this protection in 1932 was \$14,475,000 of which approximately \$1,300,000 was spent by private owners. The remaining cost has been borne by public agencies. Total expenditures by private owners in support of better forest management are placed at \$5,000,000 annually, one-half of which is for research. Practically the entire expenditure for research deals with the utilization of forest products.

Progress in American forestry today has brought only about 110,000,000 acres under conscious forest management, other than fire protection. Of this effort over ninety-five per cent has been by public agencies and less than five per cent by private owners. Total expenditures in 1932 by all agencies in the entire field of forestry amounted to approximately \$43,475,000, of which the Federal Government contributed \$26,965,000, states and counties \$10,650,000, private owners \$5,050,000, and quasi-public agencies \$800,000. Public agencies, therefore, provided ninety per cent of the funds.

The total drain upon the forests of the United States now amounts to about sixteen and one-third billion cubic feet, ninety per cent of which is cut and the remainder depletion from fire and other causes. As against a drain of sixteen and one-third billion cubic feet, present growth is estimated at nine billion cubic feet annually of timber of all sizes. Drain, therefore, is almost double natural growth. In the case of trees of saw timber size, our forests are being depleted at the ratio of five to one. Four-fifths of the remaining saw timber in the country,



Public and private ownership and forest activities as charted by the report. The public's share predominates in expenditures, in area under management, area planted and in the number of trained foresters employed. The private owner's share stands out in area devastated, amount of the yearly cut without conscious regard for future stands, need of protection and lack of it, forest area burned and absence of management plans on both timber and range lands.

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Four-fifths of the remaining saw timber in the country,

and nine-tenths of the old growth forests are in the West, while the large consuming markets are in the East and Middle West. About one-half of this supply, however, is considered economically unavailable because of inaccessibility and other factors. Its future availability will depend upon demand, price, changes in logging methods and competition of other material. Of timber of all sizes, the total supply in the United States is estimated at four hundred and eighty-seven billion cubic feet, fifty-six per cent of which is in the West.

The problem of balancing the timber budget calls for doubling the growth of timber of all sizes for the country as a whole and for increasing the supply of saw timber trees by five times. The report estimates that the nation's timber budget can be balanced by bringing about intensive timber management on 70,000,000 acres, extensive timber management on approximately 280,000,000 acres and simple protection of 110,000,000 acres. By the end of the century, it states, such a plan of management would yield approximately seventeen and one-half cubic feet of wood, an amount which would meet estimated requirements. The application of protection and management to the foregoing areas would leave about 50,000,000 acres available for other purposes or as idle land.

The problem of increasing the forest capital of the eastern United States where drain exceeds growth by almost twenty-nine billion feet is complicated by private ownership which is held to be the limiting factor because it owns ninety-eight per cent of the commercial forest land, and because the universal trend of private forest ownership is to reduce rather than build up forest growth. The forest capital of the East must be increased two and one-half times to provide growth to meet national needs.

One-half of the total area of forest land in the United States is classified as having major watershed influence and nearly three-fourths as having either major or moderate influence. Research shows destruction or deterioration of the forests is one of the major contributing causes of rapid run-off and destructive floods. It shows that forests retard the rate of run-off, put waters into the soil and underground channels, reduce the height of floods, increase summer flows, and deliver waters free from sediment.

Private ownership of forest or of agricultural land is responsible for practically all of the critical watershed problems of the East and a substantial part of those of the West. The result is unnecessarily destructive floods, causing damages running into scores of millions of dollars and the wasting away in a few years of the soil resource which will require centuries to replace. In the West, the unmanaged Public Domain constitutes the most critical erosion and flood problem on western lands.

The unsolved problem of unmanaged forest lands in public ownership has both Federal and State aspects. The Federal problem lies in the unreserved, unmanaged, overgrazed, and too largely unprotected remnant of the Public Domain, about twenty-two million acres of which are forested. The State problem includes the forested portion of Federal grants which have never been given a legal status as State forests and placed under management and the much larger area in various stages of reversion to public ownership because of tax delinquency. Both classes are in a twilight zone. Tax delinquency is creating a new public domain not of forested land but largely instead, of devastated forest land, and of such size that it promises to be a heavy burden. Few States have legislation that provides for a solution, and still fewer take advantage of the legislation they have.

Recognition of the value of forests for recreation is in its infancy. Ultimate possibilities of social benefits through forest recreation are little appreciated. Even today, the

American people are spending about two hundred and fifty million man days a year in forest recreation and are expending not less than \$1,750,000,000 annually. In view of the fact that so large a proportion of the forest lands are in private ownership, it is highly questionable if the future recreational needs of the nation can be met except through expansion of public ownership.

The forest industries of the country with a pre-depression capital value of \$10,000,000,000 and gross products of \$2,000,000,000 can be perpetuated and stabilized only by solving the forest problem. These industries depend either on virgin timber or new crops of forests. Ultimate dependence on new crops has been masked for three centuries by the abundant virgin timber supply, the end of which is now in sight. New timber crops will then become the sole means of support for these industries. Hardly less dependent upon forests are the industries based upon the use of water, forest ranges, wild life, and outdoor recreation.

The 670,000,000 acres of forest land in the United States is a great potential source of labor. Fully productive forests could employ two million people in the United States, not including those engaged in the merchandising of forest products, or those engaged in industries dependent upon forest waters, ranges, wild life, recreation, etc.

The solution of the major forest problems offers a means for the utilization for forest culture of lands which cannot be used for any other purpose, including agriculture. Such utilization will serve to stabilize permanent local industries dependent upon the products of both forests and agriculture, and should help establish a land economy that would make life in the country possible and attractive.

Over fifty million acres east of the Great Plains originally forested but not now classified as forest land has been abandoned by agriculture and is now available for forestry. Abandonment is still in process and if present trends continue twenty-five to thirty million acres more will have been abandoned by 1950.

Excessive erosion, either spectacular or so inconspicuous as to go unnoticed, is common to nearly all parts of the United States. It occurs on agricultural, range, and forest lands. It loads streams with silt, clogs irrigation works, navigable channels and harbors, fills reservoirs, increases the heights of floods and adds enormously to their destructive power. Because it first removes the fertile top layers of the soil, it is a primary cause of land abandonment. It is undoubtedly the most destructive agency affecting our great basic resource, the soil.

In its corrective approach to the forest situation, the report states that the problem is of such magnitude that solution calls for national planning and the coordinated effort of all agencies, with public leadership predominate. "The *laissez-faire* private effort," it says, "upon which the United States has largely depended up to the present time and which is avowedly planless from the national standpoint, has seriously deteriorated or destroyed the basic resources of timber, forage and land almost universally. It has not concerned itself with the public welfare in protection of watersheds. It has felt little or no responsibility for the renewal of resource on which its own industries must depend for continued existence, and much less for the economic and social benefits growing out of the perpetuity of resource and industry. Even in fire protection, its most conspicuous constructive action, the public has largely carried the financial burden."

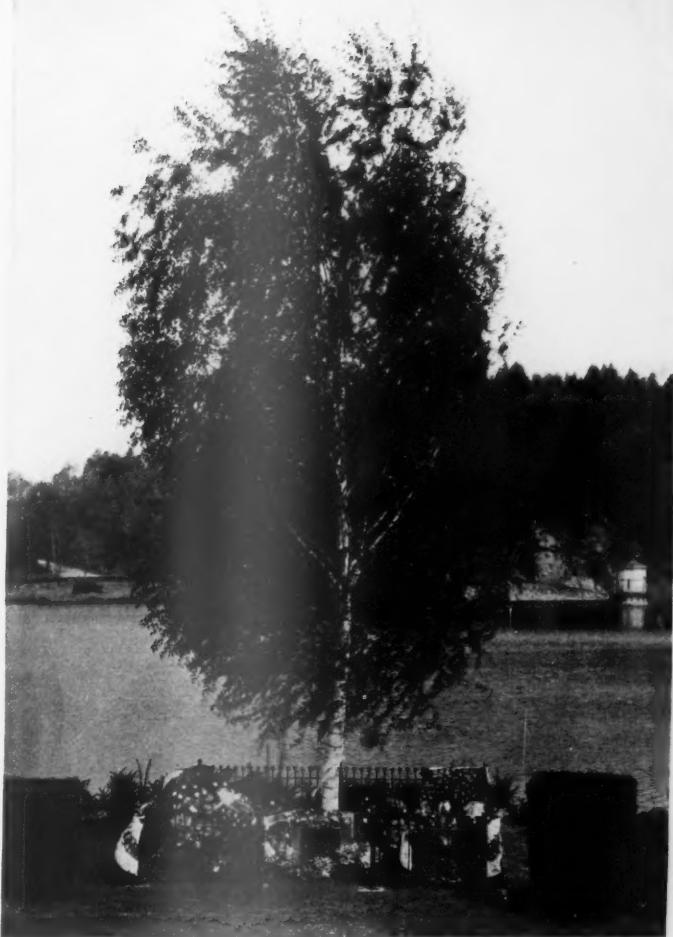
Pointing out that the outstanding progress in American forestry today has been where the public has taken things into its own hands in the ownership and management of lands, the report outlines a public program of leadership designed (1) to get forest land into pro- (Continuing on page 236)

# A DECADE OF "MOTHER'S" TREES

By  
LILIAN M. CROMELIN

THE year 1933 will go down in the annals of tree lore as marking an important date—the tenth anniversary of the writing of the tree into the celebration of Mother's Day. For on May 13, 1923, was inaugurated the beautiful and meaningful custom of the planting of "Mother's" Trees—growing out of the fact that on that day Solan Parkes, of Reading, long a lover of trees and a forestry enthusiast, planted a slim white birch on the shore of a lovely lake in the mountains of Pennsylvania. Casting about for a means to honor the memory of the mother he adored, he found in this slender tree—so perfectly called by Coleridge the "Lady of the Woods"—a fitting tribute. And so was planted the initial "Mother's Tree"—the white birch, later designated by The American Forestry Association as the National tree to be planted universally in honor of mothers and motherhood. The European form—*betula laciniata*—was selected both because it is more appropriate and beautiful in form than our native American white or paper birch, and because it will grow almost anywhere, except in very arid regions. The initial tree has thrived and flourished, as—happily—has the custom, which is now nation-wide in practice. White birches have been planted and dedicated to individual mothers, to mothers belonging to the nation, to groups of mothers—even to the mother of the great "Unknown Soldier"—that hero of impenetrable mystery before whose tomb on the heights of Arlington the nations of the world have lain grateful tribute. And it is the hope of the Association that this custom shall increase in practice until not only each State and each important city, but every town and hamlet shall have its white birch—chosen, planted and dedicated in tribute to the purest sentiment known to the questing heart of man—his love and reverence for motherhood.

It has been asked why the white birch was chosen for this honor, and the answer lies in what have been called the personal characteristics of the tree, as well as its general planting adaptability. The stem is slender, tall and extremely graceful, rounding out with dignity in full maturity. The smooth, satiny bark is white, growing whiter with the years; and also as it ages it acquires the striking black markings which add so much to the beauty of the mature tree—as the inevitable scars of life add to the beauty and sweetness



The Initial "Mother's Tree"—planted at Lake Antietam, Pennsylvania, on May 13, 1923, and photographed, with its floral tributes, after the 1932 celebration on Mother's Day at the tree.

of a woman's heart. Then there is the foliage—cut-leaved, dainty and fine, soft and delicate in texture and color—lovely indeed as it sways in the breeze. But more than all, perhaps, is the way of the tree with its branches as they seem to reach in sheltering fashion, like a mother's arms—

*"to the small, wild birds, protecting,  
From the storms of life."*

At Washington, and under the auspices of The American Forestry Association, have been planted three Mother's Trees with national significance: one, on the White House grounds, during the administration of President Coolidge, dedicated to honor the mothers of our Presidents, past and to come. This year this tree has particular meaning, as it will honor in its green and white beauty the only *living* mother of a President since the inception of the custom—Sara Delano Roosevelt, the mother of President Roosevelt and herself a great lover of trees. On a May day in 1925, with beautiful ceremony and a colorful pageant in costume by the children of the Schools of the District of Columbia, a Mother's Tree—dedicated to honor the Mothers of the Nation—was planted on the Capitol grounds. And on May 10th of last year, the tree of which previous mention has been made was planted at Arlington National Cemetery (*Continuing on page 236*)



## THE CALL OF NATURAL BEAUTY

*“A*S THE CENTURIES pass the mystery of the Universe deepens. The thoughts of civilized man accumulate like snowflakes on the summit of Everest, or the leaves of many years in winter woods, burying one past system after another, one fashion after another in religion, science, poetry and art. Knowing that so much lies buried beneath, which but now was so hot and certain, it becomes ever more difficult to trust so implicitly as of old whatever still for the moment lies on the surface of human thought, the still surviving dogma, or the latest fashion in opinion. At least it becomes difficult to trust either to dogma or to thought alone. Man looks round for some other encouragement, some other source of spiritual emotion that will not be either a dogma or a fashion, something

*‘That will be for ever  
That was from of old.’*

And then he sees the sunset, or the mountains, the flowing river, the grass and trees and birds on its banks. In the reality of these he cannot fail to believe, and in these he finds, at moments, the comfort that his heart seeks. By the side of religion, by the side of science, by the side of poetry and art, stands Natural Beauty, not as a rival to these, but as the common inspirer and nourisher of them all, and with a secret of her own beside.

“The appeal of natural beauty is more commonly or at least more consciously felt today than ever before, just because it is no new argument, no new dogma, no doctrine, no change of fashion, but something far older yet far more fresh, fresh as when the shepherd on the plains of Shinar first noted the stern beauty of the patient stars. Through the loveliness of nature, through the touch of sun or rain, or the sight of the shining restlessness of the sea, we feel

*‘Unworded things and old to our pained heart appeal.’*

And to the young who have no pain, who have not yet kept watch on man’s mortality, nature is a joy responding to their own, haunting them like a passion.

“This flag of beauty, hung out by the mysterious Universe, to claim the worship of the heart of man, what is it, and what does its signal mean to us? There is no clear interpretation. But that does not lessen its value. Like the Universe, like life, natural beauty also is a mystery. But whatever it may be, whether casual in its origin as some hold who love it well, or whether as others hold, such splendor can be nothing less than the purposeful message of God—whatever its interpretation may be, natural beauty is the ultimate spiritual appeal of the Universe, of nature, or of the God of nature, to their nursing man. It and it alone makes a common appeal to the sectaries of all our religious and scientific creeds, to the lovers of all our different schools of poetry and art, ancient and modern, and to many more beside these. It is the highest common denominator in the spiritual life of today.

“Yet now that it is most consciously valued, it is being most rapidly destroyed upon this planet. \*\*\* In old days it needed no conservation. Man was camped in the midst of it and could not get outside it, still less destroy it. Indeed, until the end of the eighteenth century the works of man only added to the beauty of nature. But science and machinery have now armed him with weapons that will be his own making or undoing, as he chooses to use them; at present he is destroying natural beauty apace in the ordinary course of business and economy. Therefore, unless he now will be at pains to make rules for the preservation of natural beauty, unless he consciously protects it at the partial expense of some of his other greedy activities, he will cut off his own spiritual supplies, and leave his descendants a helpless prey forever to the base materialism of mean and vulgar sights.

“This matter has become a public question of the first magnitude. The value of natural beauty is admitted in words by our public men, but when it comes to deeds the doctrine is too new to bear much fruit. It has for centuries been held sacrilegious to destroy a church, so churches are guarded from destruction and even exempted from taxation. But a place of natural beauty may be destroyed, and is now actually to be taxed by the State in order that it may the sooner be sold to the jerry-builder. Meanwhile, the State itself pours forth the money of rate-payer and tax-payer for the perpetration of outrages on the beauty of the country. Those who mourn over the destruction of abbeys long ago, should look also at the beam in our own eye, and hasten to save from destruction or disfigurement parks, woodlands and valley heads.

“This is a civic duty that cannot any longer be neglected without dire consequences. Destruction walks by noonday. Unless the State reverses the engines and instead of speeding up destruction, plans the development of the country so that the minimum of harm can be done to beauty, the future of our race, whatever its social, economic and political structure may be, will be brutish and shorn of spiritual value.”



Mount Chocorua, looking across Chocorua Lake from the Inn,—in the heart of the White Mountain National Forest.

## ANNUAL MEETING TO BE FORESTRY RALLY

The American Forestry Association and Eight Other Organizations to Join in Holding Outdoor Meeting in White Mountains

THE 58th Annual Meeting of The American Forestry Association will be held in the beautiful White Mountains of New Hampshire, immediately following Labor Day on September 6, 7 and 8, 1933. Differing from any meeting the Association has heretofore held, the occasion will be a conservation rally in which eight other organizations will join. They are: The Society for the Protection of

New Hampshire Forests, the Massachusetts Forestry Association, the Appalachian Mountain Club, the Connecticut Forestry Association, the New England Section of the Society of American Foresters, the New York Forestry Association, the Rhode Island Forestry Association, the Society of American Foresters, and the Empire State Forest Products Association.

The Forest Hills Hotel, at Franconia, New Hampshire, centrally located in respect to the more outstanding features

### THE 58th ANNUAL MEETING

An outdoor meeting, to be held in the White Mountains of New Hampshire September 6, 7 and 8. Headquarters will be at the Forest Hills Hotel, Franconia, N. H., delightfully situated among the pine covered hills.

The occasion will be a conservation rally in which eight other organizations will join with the Association.

The three days will be devoted to field trips with evening sessions at the Forest Hills Hotel. Lost River, Franconia Notch, the Flume, Dolly Cop Forest Camp, Pinkum Notch Huts, Gale Region Experiment Area, Crawford Notch State Forest and Swift River are among the many interesting places to be visited and studied.

Like all previous annual meetings, the public is invited to attend both discussions and field trips.

The detailed program of the meeting, which will feature nationally prominent speakers, together with special hotel rates, will be announced in a later issue of *AMERICAN FORESTS*.

and points of interest in the White Mountains, has been selected as convention headquarters. Here those attending the meeting will gather on the evening of September 5 for dinner and a formal program. The following three days will be devoted to field trips, planned so as to give everyone an opportunity to see the interesting features of the region. Evening sessions will be held at the Forest Hills Hotel each day at the

conclusion of the field trips, during which prominent speakers will discuss forestry and conservation questions. President Franklin D. Roosevelt and Secretary of Agriculture Henry A. Wallace have been invited to attend and address the meeting and it is planned to include in the field trips a visit to one of the emergency forest work camps of which three or more will be established in the White Mountain Forest under the President's Forest Relief Act. The White Mountains (*Continuing on page 240*)



## EDITORIAL

### The Copeland Report

FIGURATIVELY speaking, the Copeland report, as the Forest Service inquiry into the forest situation is known, turns the woods inside out. It is without question the most thorough and searching analysis of the state of our forest union that has ever been made. The report, which is summarized on page 204 of this issue, is particularly exhaustive and illuminating in respect to those phases of forest conditions influencing social welfare and land economy. It presents the whole broad front of the forest problem in the light of the best and most recent information it has been possible to marshall. The result is a story that cannot fail to impress the American people as it impressed the new Secretary of Agriculture, Henry A. Wallace. In transmitting the report to Congress, Mr. Wallace said, "the forest problem is one of the largest the American people have ever faced and one of the most urgent now demanding attention."

Senator Royal S. Copeland of New York initiated the inquiry a year ago by introducing in Congress a resolution calling upon the Secretary of Agriculture for information and recommendations for a coordinated plan of federal and state governments in the utilization of lands suitable for forestation. The inquiry was conducted by the Forest Service under the direction of Mr. Earl H. Clapp, Assistant Forester in Charge of Research. No less than two hundred men in Federal, state and private employment participated in the investigations and the compilation of results. Everyone familiar with the ramifications of the forest question will appreciate the tremendous task with which the men were confronted, and The American Forestry Association takes this opportunity to pay tribute to their tireless labors and their comprehensive handling of the subject. In so far as was humanly possible within the time available they gave the Congress and the nation a fact-finding, exhaustive statement of a vital internal problem with recommendations for meeting it. That is public service of a high order.

While much of the information substantiates what has long been maintained in respect to the forest situation, there is much that is new, illuminating and timely. Of special interest to the public and to land economists is the showing of what has happened to forest lands under America's traditional policy of private ownership. On the basis of results, the report concludes that private ownership of forest lands,

despite federal and state aid generously given by the public, has failed and that there are no reasons now apparent to justify the public in relying mainly upon private owners to handle their forest lands in a way that will meet public interests. The recommendations, therefore, call for public ownership to a degree that will give the public control of enough forest lands to assure that national requirements in the form of wood, protection of soil and water sources, recreational areas, wild life and community permanence will be met in the future. The recommendation does not contemplate that private ownership of forest properties or that forest industries based on private endeavor would be pushed off the American stage. The public ownership proposed, on the other hand, would leave approximately one-half the forest acreage in the country to private endeavor and these areas would be those best adapted to commercial timber growing. Furthermore, the plan recommends enlargement of public aid by state and federal agencies to help the private owner protect his forest growth, manage his forest properties on a sustained yield basis, and maintain stable markets for his products.

In its handling of the entire question the inquiry held public interests to be predominate. This is as it should be because the manner in which our forest lands are managed is in the last analysis a social problem and one which influences community, state and national life in more ways than the average citizen or community appreciates. Furthermore, they are so vast in extent as to constitute the hub of the whole question of land use and land reconstruction. The Copeland report has defined the problem, has clarified its urgency, and has recommended a program in keeping with its magnitude. It deals with many questions that have long been controversial, and deals with them fearlessly. It is to be expected, therefore, that some of its conclusions will be questioned and that its program of action will be subjected to argument. This, however, does not lessen its value. No great public question is ever rightly solved until the question itself is clearly defined and the facts marshalled. This the Copeland report has done in a highly efficient and impressive way and in addition has outlined a corrective course of action. It is now up to Congress and the nation to deal with the situation revealed promptly and aggressively, as its magnitude and urgency so clearly dictate.



# Wanted!

## The Most Beautiful Photographs of Trees in America

**The American Forestry Association Offers Cash Prizes  
Amounting to \$450 and Certificate Awards of Excellence  
in National Photographic Competition**

**T**O STIMULATE interest in the beauty of trees in the American landscape and to encourage photography as a medium of greater public appreciation of their beauty and service, The American Forestry Association is offering cash prizes amounting to \$450 and Association Certificate Awards of Excellence for the most beautiful photographs of trees in America.

The competition will be conducted on the basis of National and State awards—the cash prizes, supplemented by certificate awards, for the most beautiful photographs irrespective of location, and the Association Certificate Awards of Excellence for the most beautiful photograph from each of the forty-eight states.

For the most beautiful photograph of trees in America the Association offers an award of \$200. Second prize will be \$100, third prize \$75, fourth prize, \$50, and fifth prize \$25. In addition, five National Honorable Mention Certificates will be awarded. Certificate Awards of Excellence will go to the photographer in each of the forty-eight states submitting the most beautiful photograph made within the state.

Awards will be based on beauty in photographic effect, utilizing trees singly, in groups, or in mass. There will be no restrictions as to tree species, season, or location.

Entries will be considered first for state awards and second for national awards. That is, when a photograph is

received it will be entered in competition with other pictures from the state in which it was made. The most beautiful pictures submitted from each of the states will then be entered in national competition for the cash awards.

National awards will be made irrespective of location. In fact, if the subjects justify, several of the photographs receiving national awards may come from the same state. National winners, however, will be awarded the certificate for the state in which they were made.

All pictures submitted, while they may be made any size and of any finish, must be mounted on a mat fourteen inches wide by eighteen inches high, the standard size. This is for exhibit purposes.

The competition opens May 1, 1933 and closes at midnight of October 31. No entries will be considered postmarked after the closing date.

Final awards will be made in November 1933 in Washington, D. C., by a Jury of Awards. Those serving on the Jury are George D. Pratt, President of The American Forestry Association; Dr. John C. Merriam, President of the Carnegie Institution of Washington; F. A. Whiting, President of the American Federation of Arts; and Alexander Wetmore, Assistant Secretary of the United States National Museum.

Following the selection of Awards the collection of photographs will remain on exhibit at Washington for ten days.

Write The American Forestry Association for additional information and entry blanks.

### RULES OF THE CONTEST

The competition is open to any photographer, amateur or professional, in the United States. There is no limit as to the number of photographs a contestant may enter.

All pictures submitted, while they may be of any size and finish, must be mounted on a mat fourteen inches wide by eighteen inches high, standard size.

The name and address of the photographer, together with the title and location of the picture, must be printed on the back of each mat.

Every picture receiving either a cash or Certificate award may be published, exhibited or put to any other educational use designated by The American Forestry Association without further arrangement with its owner. In case of a copyrighted picture the holder of the copyright must grant, upon entry, permission to The American Forestry Association to use the picture for exhibit, publicity, or other educational purposes.

No picture receiving either a cash or certificate award will be returned. Upon entry, no photograph may be withdrawn from the contest except upon agreement of The American Forestry Association. The decision of the judges will be final.

If the return of photographs not receiving awards is desired, sufficient postage must be enclosed when submitted. Photographs may be returned as soon as rejected by the judges, irrespective of closing date of contest.

While every possible care will be taken, The American Forestry Association cannot be responsible for photographs that may be lost or damaged in transit or in handling.

In submitting photographs, use this address: Editor, Photographic Competition, The American Forestry Association, 1727 K Street, N. W., Washington, D. C. Otherwise, the photographs will be handled as regular material.



Photograph by Eugene A. Hancock

**"Aspen Mass"**

# THE VALUE OF PEAT MOSS IN TRANSPLANTING TREES

By HOMER L. JACOBS

"What a strange underground life is that which is led by the organisms we call trees! These great fluttering masses of leaves, stems, boughs, trunks, are not the real tree. They live underground and what we see are nothing more than their tails."

—OLIVER WENDELL HOLMES.

**W**HILE this fascinating viewpoint leaves out of consideration some important life functions that trees perform in their leaves and trunks, above the ground, it is certainly true that the spreading maze of prying hungry roots below the ground, largely bears the burden of producing beautiful, strong, and vigorous tree or shrub specimens.

The welfare of the roots is, of course, determined by the home in which they live. The surrounding soil must be hospitable and nourishing. And this is particularly important in connection with transplanting projects, for the home owner, gardener or landscape architect who plants flowers, shrubs and trees is naturally interested in reducing his planting losses and in encouraging prompt and pleasing growth.

In theory, any plant can be moved successfully at any time of the year if only enough soil is included to contain the entire root system undisturbed. In actual practice, however, this is seldom done and, as a result, from fifty per cent to ninety per cent of the fibrous feeding roots may be destroyed in transplanting. This lack of balance between top and roots after transplanting may be partially restored by cutting back the top in proportion to the destruction done to the root system. But this is a painful process to many of us and becomes particularly so in the case of large shrubs and shade trees which have been purchased because of their size. If the top must be cut back severely the tree, for a few years at least, does not serve the purpose for which it was intended. For this reason, measures which tend to restore the balance

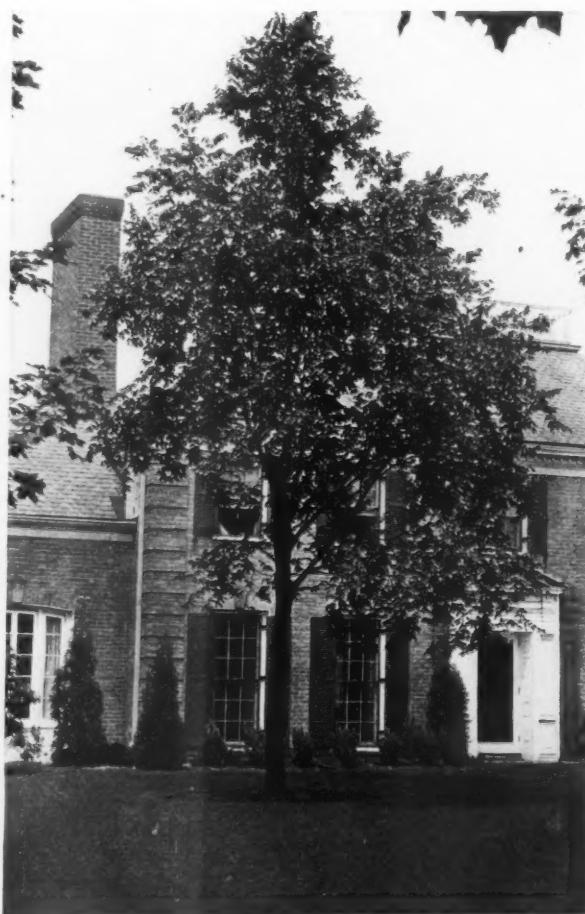
by rapid rebuilding of the roots rather than destruction of the top become especially valuable. This emphasizes the need for so preparing the soil that rapid and luxuriant rooting may take place with the least delay.

It is well known that the difference between a "rich" soil and a "poor" soil often means the difference between success and failure in planting. Unfortunately real estate subdivisions and home sites are not limited to good soils. Often the reverse is true. Furthermore, grading, filling and terracing, incident to laying out the streets and building the home, still further mistreat and impoverish the lawn and garden space finally delivered to the home owner.

And while we may recognize the fact that a soil is in bad condition and unfitted for growing trees, shrubs and flowers, sometimes we are not so sure just what to do to make a "good" soil out of a "poor" soil.

The need for a vigorous, rapidly growing root system has been pointed out on newly transplanted as well as established trees and shrubs. There are many factors or conditions which influence root growth. One of the most important of these requirements is the proper relationship between the air and water and the remaining bulk of the soil. Another is that the soil shall be in such physical condition that roots may enter and penetrate freely in search of food and water.

These conditions tend to be brought about in soils of widely different nature by the presence of organic materials of a humus-forming nature. The use of such a material becomes imperative on poor surface soils or in preparing the lower layers of subsoil for the



Davey Tree Expert Company

In transplanting it is necessary that the roots be received in a rich and hospitable soil. The luxuriant foliage of this elm, a year and a half after transplanting, is largely due to the care given to the root system during and after the moving process.

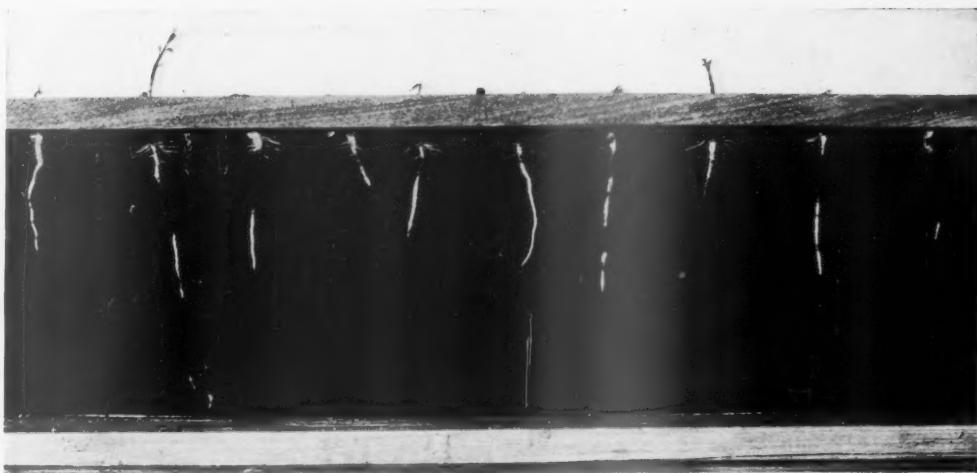
use of deep-rooted trees and shrubs. This need is recognized by practical gardeners and by scientific soil workers alike.

In selecting a humus-forming material for soil improvement, the average home owner and the large organization engaged in tree planting face much the same problem. Each is seeking a material that is convenient and inoffensive. Furthermore, it must be safe and generally applicable for use on a large number of species and a great variety of soils.

Among the materials which have been recommended and which might be considered are fresh and dried manures, peats, and leaf mold. Some of these products are not readily available at all times. Raw manures are offensive to handle, carry weed seeds and are quite high in water content. Topsoil has long been recommended as an ideal material for use in transplanting. However, topsoil is sometimes difficult to secure and it is not a uniform material. Its use, especially on large plantings, requires removing a similar amount of discarded subsoil from the premises.

Since there is always an unlimited amount of subsoil present on every planting operation, the question naturally arises whether or not subsoil can be prepared, in one operation, into a planting medium at least as good as ordinary topsoil. The Davey Tree Expert Company has conducted for a number of years experiments designed to answer this question and some of the results should be of general interest.

One method used in testing the response of roots to various



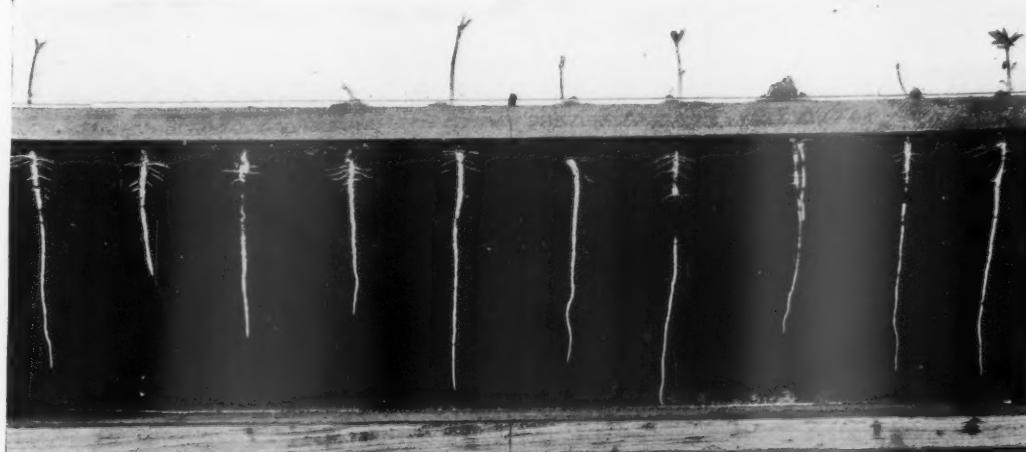
Davey Tree Expert Company

An important requirement in plant growth is that the soil constituents permit the free entrance and penetration of the roots. This is secured through the use of humus-forming material, and experiment has proved peat moss a highly satisfactory agent. This photograph shows the growth of black walnut seedlings in *unimproved*, sandy soil, nine days after planting.

planting media is to grow each tree just outside of a wooden pit one side of which is made of plate glass. In this way accurate observations and drawings can be made, at any time, of the roots showing against the glass.

In 1930 one lot of trees was grown in a stiff, sticky, unimproved clay subsoil, another lot was grown in a loam topsoil of medium fertility. In comparison with these were groups grown in raw clay subsoil improved in various ways. Of particular interest is a comparison of American elm trees grown in topsoil with those grown in the clay subsoil with which was mixed peat moss in the proportion of one part of peat to two parts of clay by volume. The rapidity with which the root systems had renewed themselves in the peat moss two months after the trees were transplanted, was most striking. By comparison the trees planted in topsoil had just begun to show root growth at this time. The difference in the vigor of tops was also clearly marked.

Trees grown in unimproved clay subsoil showed very weak growth of both roots and tops. Less bulky material of higher nitrogen content, such as fresh manures and some of the raw peats, did not aerate the soil sufficiently. The sphagnum moss peat seemed to relieve this difficulty. Even when mixed in large quantities at a depth of three feet in (Continuing on page 237)



Davey Tree Expert Company

Note the great difference in the vigor of the root growth here. These walnut seedlings were planted under exactly the same conditions as those shown above, and photographed nine days after planting, but peat moss had been introduced in the soil, with the resultant success.

# LONGLEAF PINE

*Pinus Palustris - - Miller*



In the original southern pine forest, longleaf pine outranked shortleaf, loblolly and slash pines, and was comparable to the present rank of Douglas Fir in national importance. The temperate almost sub-tropical climate, combined with ample rainfall of the coastal plain from southeastern Virginia through North and South Carolinas, Georgia, Florida, Alabama, Mississippi, Louisiana and eastern Texas, furnishes desirable growing conditions. Trees of best development are found on moist but well drained, deep, sandy loam, but they grow well on all sandy and gravelly soils within this range.

Literally translated, its botanical name *Pinus palustris* means the pine that lives in marshy places, but it grows on many different kinds of soil. Frequently growing with short-leaf, loblolly, and slash pines, it shares with them the common name of Southern yellow pine, and in certain respects is the most desirable of them all. It is commonly known as "longstraw" pine.

The leaves, or needles, are eight to eighteen inches long, held three in a bundle, and drop off before the end of the second season. Like all other pines, separate male and female flowers are borne on the same tree during early spring. The male flowers appear as dark rose-purple catkins around the base of young shoots and bear yellow pollen. These shrivel and fall shortly after the wind has carried the pollen to fertilize the pistillate or female blossoms, which appear in pairs or small clusters at the ends of the upper branches. During the second season after fertilization these grow into cones five to ten inches long, and having matured, release the winged seeds which develop in pairs under each of the cone scales.

Longleaf pine frequently grows to heights of 100 to 120 feet, with a tall slightly tapering trunk from two to three feet in diameter. The orange-brown bark of mature trees is made up of many closely pressed papery scales and may be a half inch thick.

The light red to orange yellow heart-wood is exceedingly hard, strong and durable, and within the tree is surrounded by a thin nearly white layer of sapwood. A cubic foot of heartwood weighs forty to forty-three pounds when air dry. Its great strength and the large sizes in which it is available cause it to be favored above most others for construction. It is used for heavy girders in buildings and bridges, mast and spars, railway-ties, flooring, interior finish and general construction, as well as for fuel and charcoal.

The annual cut of longleaf pine is not known, but it probably amounts to about one third of all the Southern yellow pine lumber cut. During 1930 the total was 7,450,238,000 board feet, of which more than half was produced by mills in Alabama, Mississippi, Louisiana, and Texas. Recent estimates indicate that the region occupied by Southern pines now contains about 116,000,000,000 board feet of saw timber. The

Longleaf pine—the aristocrat of the southern pines, frequently attains heights of 100 to 120 feet on the light sandy soils of the coastal plain from southeastern Virginia to western Texas.

total volume of these Southern yellow pines ranks fourth in our national storehouse of forest wealth, being exceeded only by Douglas fir, Ponderosa Pine and the Western firs.

No description of longleaf pine is complete without reference to the naval stores industry. This general term applies chiefly to turpentine and rosin, the principal products derived from the distillation of the pitch or crude gum which exudes from pine trees when "chipped" or wounded. It also is applied to similar products obtained by distilling the pine wood. Longleaf and slash pines are the chief gum-running trees from which naval stores are secured. Most of this is produced in the region from South Carolina to Mississippi. The value of these according to the 1930 United States census exceeded \$30,000,000. Paint and varnish, soap, shoe polish, paper, and printing ink use up most of the naval stores. Chipping of the trees and distilling the gum employs several thousand people and is one of the major forest industries of some portions of the southeast.

Longleaf pine produces vigorous seedlings which grow slowly above ground during the first few years because of the energy spent developing a long tap root and large root system. After four or five years the longleaf saplings begin to grow rapidly and continue for thirty-five to fifty years, producing in that period trees fifty-five to eighty feet tall and seven to eleven inches in diameter. Timber growth of 300 to 500 board feet per acre a year in full stands is not uncommon throughout the longleaf area.

Fire and hogs are the worst enemies of longleaf pine. During the early seedling stage light grass fires do comparatively little harm, but this apparent immunity becomes less effective as the trees get taller. While the small trees have what is sometimes called an "asbestos bud," their sweet succulent roots appeal to hogs that range much of the Southern pine country. A single "razorback" hog with a taste for pine roots may destroy hundreds of little trees in a day.

Again, after the trees have attained a fair size and have been wounded or "faced" for gum, they are easily damaged by fire. These faces start a few inches from the ground, and being covered with dry gum or pitch burn easily. In spite of constant efforts fires continue to rob the South of millions of dollars in present and future timber values.

Various insects and fungus diseases attack longleaf pine, but the one most generally recognized is the Southern pine beetle. Attacks by these tiny insects upon the living trees may be partially prevented by not cutting timber in the hot season, or if it must be cut, by piling and burning the brush as quickly as possible. Infested trees should be used at once, and all brush and bark should be burned.

Longleaf pine bears large crops of seeds at intervals of three to five years, with a few seed from open stands nearly every year. Where seed trees are left, and fire and hogs kept out, it re-establishes itself after a lumbering operation. Since 1920 Louisiana has required timber operators to leave at least one seed tree, eight inches in diameter, to the acre.

Where seed trees are not available seedlings may be grown in a nursery and transplanted after the first year. Set out at intervals of six to eight feet there will be from 700 to 1,200 trees to the acre. Successful plantations have been established in many parts of the South, and with fire protection are producing from 100 to 500 board feet to the acre yearly.



The orange-brown bark, furrowed and crossed into closely pressed scales may be confused with that of some other pines, but the long, flexible, shiny, dark-green needles, held in groups of threes, are characteristic of longleaf pine. The reddish brown mature cones are five to ten inches long, with thick scales that turn back to release the winged seeds. At the base of the leaves is shown a cluster of pollen bearing staminate blossoms.



Natural range of longleaf pine within the United States.



## TRAILS OF THE WILD

When the Order is "Boots and Saddles!" Will You Be There?

**B**OOTS and saddles!" That will be the order of the day on July 10 when a group of members of The American Forestry Association leave Missoula, Montana, on the first ride of the "Trail Riders of the National Forests." Under the guidance of forest rangers and flanked by expert trailsmen and wranglers, the party will venture beyond the outposts of civilization for six days, exploring one of the great remaining wilderness areas in the United States—the South Fork country of the Flathead National Forest.

A month later, on August 16, the order will again be given, this time at Helena, Montana, starting point of the second exploration trip of the Trail Riders into the romantic Sun River Wilderness of the Lewis and Clark National Forest, unchanged since the Blackfeet Indians held their picturesque sun dances a century ago.

One need not be experienced in the saddle or have knowledge of trail life to make the trips. The Trail Riders are primarily for the inexperienced—for those who seek vacations in forest country that typifies the western wilderness of a hundred years ago. Only horses well trained to mountain trail travel will be used. Experienced trailsmen will be with the parties from beginning to end. Federal forest rangers, protectors of the wilderness itself, will serve as guides and interpreters. Qualified cooks, expert in preparing camp meals, will provide for the appetites of the riders.

All necessary equipment, with the exception of sleeping

bags, will be provided. The latter, of the type recommended by the United States Forest Service, may be secured at the starting point of each trip for \$7.50.

The cost of both trips is astonishingly low, reduced to actual expenses. Trip No. 1, into the South Fork Wilderness, may be made at a little more than \$7 a day, or a total of \$43.75 from Missoula. Trip No. 2, into the Sun River Wilderness, will cost less than \$11 a day, or a total of \$54.75 from Helena. There will be no other charges. Reduced railroad fares from every section of the country to both Missoula and Helena will be in effect.

Never before has such an opportunity to explore the really primitive areas of the country been available to the public. Both trips will be conducted by the Association in cooperation with the United States Forest Service and the Northern Pacific Railroad, thus assuring that the agencies that service the Montana wildernesses will serve the Trail Riders.

Both parties will be made up entirely of members of The American Forestry Association. No one else may qualify for a place. Thus the ranks of the Trail Riders will be filled with men and women keenly interested in the forest wilderness. Arrangements have been made to provide for older children in perfect safety.

A limit has been placed on the number of people to be included in the parties, so members are urged to make their reservations immediately. If you have not already received the folder setting forth the two trips in detail, write for it today.



Great White Trillium  
(*Trillium grandiflorum*)

# A FOREST PAGE

FOR

## Boys and Girls

Conducted by WAKELIN MCNEEL



Showy Ladyslipper  
(*Cypripedium spectabile*)

## SOME EARLY WILD FLOWERS

**W**HOEVER possesses two loaves of bread, let him trade one for a blossom of Narcissus, for bread is nourishment for the body, but the Narcissus for the soul."

This statement is attributed to Mahomet who taught that Heaven is a place of large beautiful gardens. Long before modern herbalists and botanists classified plants into families, genera, species and variations of species, the hopes and fears, the curses and blessings of people became bound up with the colors, shapes, habits of growth and behaviorisms of flowering plants. Today we do not believe that all plants were created for man's sole benefit. Only two hundred and fifty of the approximately one hundred thousand species of flowering plants render any important service to man, and only about fifty are utilized to any great extent. But the ancient herbalist ascribed to every plant any use their imagination could contrive, and being unschooled in science, they assumed that the external appearances, or habits of growth, or behavior were indications of the use for which the plant was created. Quaking aspen was good for the shaking

palsy; tea made of nettle leaves cured rash; turmeric resembles in color the skin of a jaundice patient, hence was a curative for jaundice; bloodroot cured dysentery; hellebore was a cure for madness and even as far down in history as Queen Elizabeth's reign it was a cure for melancholy. Didn't the heart-shaped leaves of the wood sorrel indicate its power as a heart restorative, and the shape of the liverwort its potency in case of a poorly functioning liver? As long as the herbalists were priests, all went well; but when the art passed into the hands of quacks and charlatans, the masses suffered from extortion. Our Indians and early settlers used numberless herbs for medicines but their basis for determining the medicinal value of a plant seemed to be the bitterness of the product—the more bitter the better the medicine.

Out of the imaginings of the past with reference to flowers have come terms and usances in a sort of personification that are actually lovely—the rose for beauty, the olive branch for peace, lily for purity, laurel for victory, thorn for suffering, holly for reverence, the vine for revelry, the poppy for sensuousness, the violet for modesty. Some of the legends



Wind Flower  
(*Anemone patens*)



Bird-foot Violet  
(*Viola pedata*)



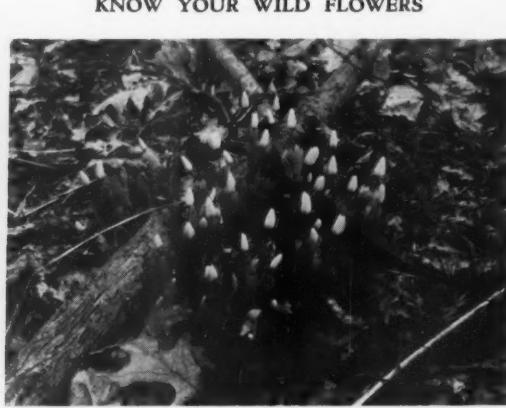
Rue Anemone  
(*Anemonella thalictroides*)



May Flower  
(*Hepatica triloba*)



Jack-in-the-Pulpit  
(*Arisaema triphyllum*)



Bloodroot  
(*Sanguinaria canadensis*)



Yellow Ladyslipper  
(*Cypripedium pubescens*)

about flowers are lovely in their imaginativeness. The star of Bethlehem is a part of the star that led the Wisemen and the shepherds to the manger of the Christ Child. After the star had guided the visitors to the manger, it burst and scattered the pieces as flowers about the fields. The red bud, or Judas tree, burned with shame after Judas hung himself upon it. When Saint Veronica wiped the sweat and blood from Christ's face as He carried the cross to Calvary, drops of blood fell upon the flowers she was wearing and the sacred imprint gave them the resemblance of a human countenance; hence the veronica.

The flowers associated with either the birth or death of Christ are legend. The cattail was the sceptre that the persecutors gave Christ in mocking derision of his power; and, gruesome as it may seem, the wood sorrel, arum, purple orchis and red anemone owe their color to the blood which dropped from the Cross. When King Malchar found the

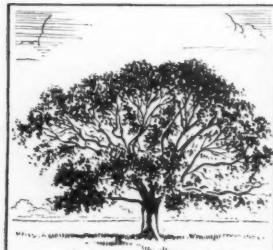
chrysanthemum at the door of the manger he knew he had found the birth place of the King.

"It is the place," he cried, "for look! Here is a flower, rayed like the star that has guided us, and which is even now over our heads." When he plucked the flower the door to the manger flew open.

The soul and personality of flowers have such an influence today that states and nations have adopted flowers as symbolic of their ideals, just as flowers have become emblazoned on family coats of arms, or have furnished names for people, the most beautiful of which are those the Indians gave their daughters, as Bending Lily and Budding Poppy. Science has relegated to memory's sentimental archives the interesting doctrine that a plant has medicinal value because it resembles in some way the organ or disease it would cure. Yet it is not a long stretch from that doctrine to the statement of a modern scholar, H. W. Beecher: (Continuing on page 238)

## FAMOUS TREES EVERY BOY AND GIRL SHOULD KNOW

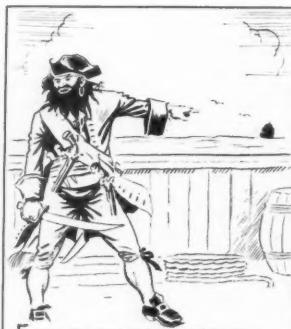
### No. 7---TEACH'S OAK



NEAR OCRAKOC INLET, ON THE ATLANTIC COAST OF NORTH CAROLINA, STANDS ONE OF THE MOST ROMANTIC TREES IN AMERICA---"TEACH OAK". IN THE EARLY DAYS THE TREE SERVED AS A LANDMARK AND GUIDE FOR SAILORS. WHEN EDWARD TEACH, THE NOTORIOUS PIRATE "BLACKBEARD", CRUISED AROUND THE INLET THE GREAT TREE ATTRACTED HIM AND HE OFTEN SOUGHT REFUGE UNDER ITS BRANCHES.



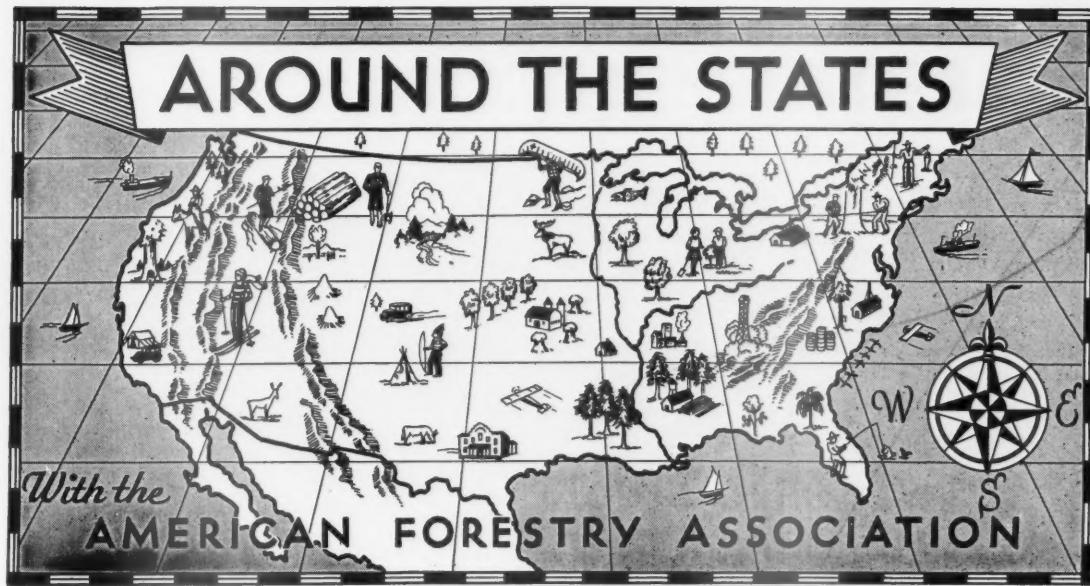
CALLED "BLACKBEARD" BECAUSE OF THE BUSHY BLACK WHISKERS THAT COVERED HIS FACE, PIRATE TEACH WAS BORN IN ENGLAND, ABOUT 1690. EARLY IN LIFE HE SET OUT ON HIS CAREER AS A PIRATE, PREYING ON DEFENSELESS MERCHANTMEN, USUALLY ALONG THE COASTS OF VIRGINIA AND NORTH CAROLINA.



FINDING IT IMPOSSIBLE TO CAPTURE TEACH, THE KING OF ENGLAND OFFERED HIM A PARDON IF HE WOULD SURRENDER AND LEAD AN HONEST LIFE. THE PIRATE ACCEPTED BUT THE LURE OF THE SEA WAS TOO GREAT AND IN A SHORT TIME HE ONCE MORE BECAME THE TERROR OF THE SEA AROUND NORTH CAROLINA.



ACCORDING TO LEGEND, "BLACKBEARD", ON HIS VISITS TO THE TREE, BURIED MUCH OF HIS BOOTY AROUND ITS ROOTS. SO STRONG DOES THE BELIEF EXIST THAT FOR YEARS TREASURE HUNTERS HAVE DUG IN MANY PLACES AROUND IT, BUT SO FAR AS KNOWN THE PRECIOUS LOOT OF THE PIRATE HAS NEVER BEEN FOUND.



## Forest Work Project Speeds Forward

When President Roosevelt, on March 30, signed the Forest Relief Bill to provide woods work for 250,000 unemployed, he issued the edict that work must begin within two weeks. Immediately governmental agencies moved in rapid fire order to that end, and as this issue goes to press enrollment of the first quota of 25,000 was well underway, several thousand young men were in Army conditioning centers, woods camps from which actual work will be done were being located and built and the multitude of details and plans incident to carrying out the project as a whole were rapidly taking shape. From present indications, the first work camps to be in operation will be near Luray, Virginia, on the George Washington National Forest. The initial quota of men is being limited to young men between the ages of eighteen and twenty-five with dependents and that policy is believed to reflect the President's purpose to make the project primarily a measure for the rehabilitation of young men beaten down by the depression or forced to leave home because of the destitution of families.

On April 6, President Roosevelt issued orders authorizing the use of \$10,000,000 from unallotted funds and soon after called for immediate enlistment of men from the sixteen larger cities of the eastern half of the country. Instructions were given that they be transported to camps in the nine Army Corps Areas for two weeks preliminary training and physical examination preparatory to being moved to the forest camps. Responsibility for selecting the men was placed with the relief organizations of the several states. After provisional acceptance the men are being given physical examinations and other tests, together with inoculation against smallpox and typhoid, at the Army conditioning camps. They remain there about two weeks before going to the field. On the basis of eliminations during the first week of recruiting, it has been estimated that a half million applicants may be needed to supply the eventual army of 250,000.

About 1,250 camps will be necessary to house the 250,000 men. The men will receive \$30 a month with board, lodging, hospital care and transportation, and it is expected that from \$20 to \$25 a month of the pay will be assigned to dependents.

The work camps will be constructed by the Army, whose officers will have charge of sanitation, discipline and camp management. The government bureau providing the woods work will have direction and supervision of the men in executing the work. According to reports from the War Department, each forest camp will consist of 215 men with an Army officer in charge, assisted by two Army Sergeants, four section foremen, eight assistant section foremen, one clerk, one storekeeper, one steward, two first class cooks and three second cooks, selected from the workers.

The first work is to be started on federally

Cherokee National Forest, three, Nantahala National Forest, one; Maine, White Mountain National Forest, one; New Hampshire, White Mountain National Forest, three; North Carolina, Pisgah National Forest, five, Nantahala National Forest, one; Oklahoma, Ouachita National Forest, one; Pennsylvania, Alleghany National Forest, five; South Carolina, Nantahala National Forest, one; Tennessee, Cherokee National Forest, three; Unaka National Forest, two; Vermont, Green Mountain National Forest, two; Virginia, George Washington National Forest, four, Unaka National Forest, three, and Natural Bridge National Forest, three; West Virginia, Monongahela National Forest, five.

It is expected that this number will be increased later. Some thirty camps are planned for the National Forests of Minnesota, Wisconsin and northern Michigan, and fifty camps are contemplated for the National Park System, approximately one hundred camps for the Indian reservations and an undetermined number for the Public Domain.

The three broad fields of work laid out for the project include federal lands, state lands, and private lands involved in authorized cooperative projects of public welfare. Plans for state and cooperative work have not been completed as this is written, but it is expected that these projects will be clearly listed in the near future. On April 6, nearly 200 representatives of the several states assembled in Washington at the call of Secretary Wallace in order to submit and discuss their plans. The state foresters submitted plans and projects under which more than 200 camps of standard size could be established for work on state and privately owned lands. The delay in approving these projects appears to rest upon the question as to how money expended on state and privately owned land can be reimbursed to the Federal Government.

As plans progress each state will be offered opportunities to enroll men in proportion to its 1930 population. State quotas will be approximately one man for every 500 of population. Projects within each state will be selected on the basis of availability and desirability rather than upon the basis of population.

### ASSOCIATION PRESENTED PEN USED IN SIGNING FOREST RELIEF BILL

The pen with which President Franklin D. Roosevelt signed the Emergency Unemployment Relief Bill on March 31 is a highly prized possession of The American Forestry Association. Following the signing of the Bill the President gave the pen to Ovid Butler, executive secretary of the Association, who with G. H. Collingwood, the Association's forester, witnessed the memorable occasion. The pen will be framed and placed on permanent exhibit at the Association's headquarters in Washington.

owned land, namely, the National Forests, the National Parks and the Indian Reservations, with technical supervision by representatives of the bureaus concerned. It is anticipated that as the project develops additional supervisory and technical assistance will be needed.

Final location of camps on the various National Forests has not been completed, but the sites of fifty camps of 200 men each have been approved in eastern states as follows:

Alabama, Alabama National Forest, one camp; Arkansas, Ouachita National Forest, four, Ozark National Forest, three; Georgia,

The  
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Bulletin

## What this THE VALUE OF PEAT MOSS IN TRANSPLANTING TREES

By Homer L. Jacobs, Arboriculturist  
The Davey Tree Expert Co., Kent, Ohio

Large tree moving presents somewhat different problems . . . the first immediate problem becomes one of so caring for the tree that it may grow a large number of new feeding roots in the shortest period of time, to prevent scorching by the time the leaves are fully expanded and the hot, dry summer days arrive. "What planting medium will encourage the maximum root growth in the minimum of time?"

Time-honored horticultural usage tells us that topsoil with the possible addition of some well rotted organic material should be used, but in large ornamental plantings, topsoil is often difficult to secure and sometimes prohibitive in cost. Over a period of years observations of manures, domestic peat and German peat moss indicate that the German peat moss has an especially favorable reaction on root growth.

With this in mind the Davey Tree Expert Co. began experimental work to determine, if possible, whether or not raw subsoil could be prepared in such a way that it would at least be as favorable as topsoil.

Of the soils and mixtures used the following are of particular interest:

**FIRST**—a heavy clay subsoil classified as Volusia Clay Loam was used. This is a very sticky soil when wet and in the absence of good drainage and organic material is very difficult to handle.

**SECOND**—the same clay subsoil as above with peat moss mixed in the proportion of one part peat moss and two parts clay by volume. These were thoroughly mixed.

**THIRD**—topsoil of the Wooster loam type. This was in good physical condition and of medium fertility.

From the first the roots of the trees planted in clay and peat moss grew much more rapidly than those planted in either subsoil alone or topsoil, and this condition continued for many months, the top growth lagging in proportion to the root growth in the soils that did not contain peat moss. At the end of the season trunk measurements showed 56% better trunk growth on the peat moss treated trees than those planted in topsoil. During the second season the benefits continued showing the peat moss treated trees to have again made a 35% better root development.

In another test American Elms planted in regular topsoil and peat moss treated soil showed that peat moss benefited from 33 1/3 to almost 60% over a period of three years.

These cases taken from actual experience seem to indicate that a mixture of peat moss and soil induces rapid and profuse root growth, and does not in any way cause the trees to become rootbound.

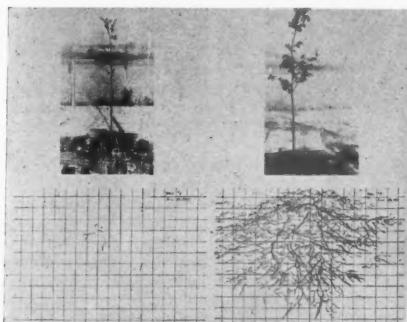


All photos courtesy of Davey Tree Expert Co.

# means to you . . . .



Root growth of one of a group of young elm trees a year after transplanting with a fillback of peat moss and subsoil mixture. The tape measure marks location of original side wall. Rule shows that roots grew a distance of 21 inches in this short time.



Composite picture showing root development of two young trees two months after transplanting. Tree at left was planted in top soil; tree at right was planted in a mixture containing two parts subsoil clay and one part peat moss by volume. Area represented by root growth is about one square yard. Note prolific root growth where peat moss was used.



Part of tree planting at the George Washington birthplace national monument near Oak Grove, Va. 317 bales of peat moss were used by the Davey Tree Expert Co. in this planting operation. Note fine healthy condition of trees, kept vigorous by peat moss. V. Roswell Ludgate was the landscape architect.

As the leading tree surgeons in the United States the Davey Tree Expert Company, Kent, Ohio, make a practice of thoroughly investigating and knowing all about every product that might affect the well being of transplanted trees. They experiment impartially. You can therefore implicitly trust in their judgment. They know what to do . . . how to do it . . . and do not waste precious time or take chances with priceless trees by guessing. Nor do they experiment on *your* trees. Nothing is used by them until it has first been tried and proved in their own fields and laboratory.

Of their own accord, and to prove to their own satisfaction, whether or not peat moss was all that was claimed for it, Davey Tree experts have conducted a series of exhaustive experiments. They have found how peat moss reacted under varied conditions—from the germination of seeds to its use with the largest of transplanted trees. They have gone even further, investigating the claim that peat moss restricts root growth—and found, instead, that it materially *helped* root growth . . . helped so much, in fact, that *Davey Tree experts now use German or Holland peat moss as one half of the fillback on every tree they transplant.*

Coming from this authoritative source we naturally prize this testimony very much. It is one more added to the fast growing list of those who use and enthusiastically recommend peat moss. From a very modest beginning German & Holland peat moss has now earned such widespread support that it is in daily use on whole park systems, cemeteries, road and real estate developments, re-forestation programs and many private estates. Uses frequently develop that require thousands of bales on a single job. And always it is found far superior—practically the only completely satisfactory medium for creating and maintaining healthy and fertile soils.

Why don't you use peat moss now? The experimenting has been done . . . it has the unqualified approval of many of the country's leading experts. Sold by seedsmen and fertilizer dealers everywhere. To protect your purchase, look for the word "Germany" or "Holland" stenciled on every bale you buy. Our new Bureau of Research will work with you if you wish.

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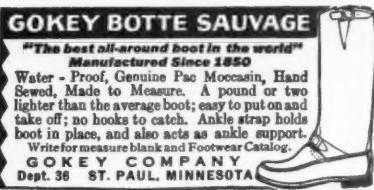
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## Federal Conservation Agencies Reported Endangered by Reorganization

At the time of going to press Washington newspaper correspondents were reporting proposed reorganizations of government departments by the Roosevelt Administration which, if carried out, would in the judgment of The American Forestry Association, seriously endanger the activities of some of the federal conservation agencies. These reports, said to have their source in the office of Budget Director Lewis Douglas, could not be confirmed. Reorganization, as interpreted by reliable Washington press correspondents, means not only consolidations and realignments but elimination of all services not absolutely essential to efficient conduct of the government.

The article prophesies that in the reorganization of the Department of Agriculture the scientific work of the Department will be largely emasculated and that the Forest Service will be transferred and made part of a Natural Resources Division in the Department of the Interior. Commenting on the reports, The American Forestry Association on April 15 stated that although the information could not be authenticated the failure of the Administration to deny the statements and the fact that they are published by reputable newspapers whose representatives are close to governmental sources of information would appear to indicate that radical changes affecting forestry are under consideration.

"Vigorous expression of public disapproval of such proposals as the transfer to the Forest Service and the dismantling of forest research", the Association declared, "seem fully warranted. The necessity for economy is not open to argument", the Association declared, "but economy carried to the point of wiping out or demolishing forest research essential to the management, development and use of the National Forests and other public resources may well be questioned. It is obvious that research is vital to successful land planning and that its complete breakdown would short-circuit progress. To attempt to program forestry either in a national or state way without adequate provision for necessary scientific knowledge and guidance would be a very serious mistake."

In regard to the reported transfer of the Forest Service from the Department of Agriculture, the Association said: "The major purpose of the Department of Agriculture is the study of plant and animal life and the

application of biological science to land productivity and use. Trees are plants whether they yield apples or wood. They are a soil crop. There are more acres of tree land on American farms than acres of any other crop—more, in fact than in all the National Forests. The perpetuation and improvement of trees and woodlots and forests depends upon man's knowledge of their growth requirements; their service to the nation depends upon his ability to fit them into the land economy of American agriculture and American land use. To transfer the Forest Service and its related branches from the Department of Agriculture, the home for plants, where they are by nature members of the great family of plants, and assign their culture and conservation to a separate department, will prevent the forests from rendering their most effective service in any program of social and economic reconstruction."

Possible mergers in the Department of Agriculture are said to include the Forest Service and the Bureau of Biological Survey and the Bureau of Entomology and Bureau of Plant Quarantine. The Bureau of Public Roads would be shifted to a projected public works agency. Agencies said to be affected by the retrenchment plans, either eliminated or reduced to a skeleton force, include the Office of Experiment Stations, the Extension Service, Bureau of Plant Industry, Bureau of Chemistry and Soils, Bureau of Home Economics and the Bureau of Agricultural Economics. The Weather Bureau is slated to be transferred to the Department of Commerce, it is said. The Bureau of Fisheries will continue under the Commerce Department despite belief in some quarters that it will go over to the Department of the Interior, some press correspondents reveal.

The recommendations reported in the press are said to be the results of studies by the Director of the Budget Louis Douglas, Secretary of Commerce Daniel C. Roper, and former Congressman Swagger Sherley, who are known to be working on a reorganization plan for President Roosevelt. This is in accordance with the authority given the President by Congress a few weeks ago. If the President approves the plans prepared by the Budget Director and his associates, a two-thirds vote of each House in Congress will be necessary to over-rule him.

## President Seeks Authority for Tennessee Valley Project

In a special message to Congress, President Roosevelt on April 10 called for the creation of a Tennessee Valley authority to put in motion a gigantic program of forest and industrial development in the South. In substance, the plan is identical to the one he proposed at Warm Springs, Georgia, before his inauguration. At that time it was stated that 200,000 men could be given employment.

The program would promote an extensive scheme of reforestation, flood control, power development, prevention of soil erosion, abandonment of unproductive farm lands, and the distribution and diversification of industry. Fifty million dollars, obtained from unexpended Treasury balances, would finance the project at the start. The remainder would be drawn from a bond issue.

Concerning the power development embraced in the industrial development, especially Muscle Shoals, directly recommended by the President, the message declared that "it leads logically to national planning for a complete

watershed involving many states and the future lives and welfare of millions."

The President's message follows in full:

"The continued idleness of a great national investment in the Tennessee Valley leads me to ask the Congress for legislation necessary to enlist this project in the service of the people.

"It is clear that the Muscle Shoals development is but a small part of the potential public usefulness of the entire Tennessee River. Such use, if envisioned in its entirety, transcends mere power development; it enters the wide fields of flood control, soil erosion, afforestation, elimination from agricultural use of marginal lands, and distribution and diversification of industry. In short, this power development of war days leads logically to national planning for a complete watershed involving many states and the future lives and welfare of millions. It touches and gives life to all forms of human concerns."

"I, therefore, suggest to the Congress legislation to create a Tennessee Valley authority—

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a corporation clothed with the power of government but possessed of the flexibility and initiative of a private enterprise. It should be charged with the broadest duty of planning for the proper use, conservation and development of the natural resources of the Tennessee River drainage basin and its adjoining territory for the general, social and economic welfare of the nation.

"This authority should also be clothed with the necessary power to carry these plans into effect. Its duty should be the rehabilitation of the Muscle Shoals development and the coordination of it with the wider plan.

"Many hard lessons have taught us the human waste that results from lack of planning. Here and there a few wise cities and counties have looked ahead and planned. But our nation has 'just grown.' It is time to extend planning to a wider field, in this instance comprehending in one great project many states directly concerned with the basin of one of our greatest rivers.

"This in a true sense is a return to the spirit and vision of the pioneer. If we are successful here we can march on, step by step, in a like development of other great natural territorial units within our borders."

#### Cox Hearing Postponed

The hearing of William T. Cox, Conservation Commissioner of Minnesota, recently suspended charged with lack of executive ability, failed to materialize on March 31 as scheduled. The hearing of the charges against Mr. Cox was to have been held by the Minnesota Conservation Commission, three of whose five members brought the charges against him. When the meeting was called to order on March 31, however, Secretary Foley announced it had been decided to postpone the hearing of Mr. Cox's case until April 21. This action, he said, was taken in fairness to Mr. Cox.

Mr. Cox with his attorney and witnesses was on hand when the March 31 meeting convened. Public interest in the hearing also drew to the committee room a large number of citizens interested in conservation. Among them was Franklin W. Reed of Washington, D. C., Secretary of the Society of American Foresters, who asked to make a statement to the Commission in behalf of his organization. Mr. Reed called the Commission's attention to the fact that Mr. Cox has long been a member of the Society of high professional standing and held in high regard by his fellow professional foresters. His long record of service in forestry and conservation, he declared, has been such as to convince anyone who knows him that the Minnesota Conservation Commission made a wise choice when a year ago it selected Mr. Cox as State Commissioner of Conservation.

"How the Commission could have made the mistake of selecting for the office a man who in so short a time would prove himself incompetent is hard to understand," Mr. Reed told the Commission. "It is particularly difficult to understand in the light of Mr. Cox's past record and of the high regard in which he is held by conservation leaders throughout the country. By its own action, or proposed action, the Commission would seem to have put itself in a position before the public difficult to explain."

It is difficult to believe, Mr. Reed said, that the Commission with its summary treatment of Mr. Cox as a precedent will be able to find a properly qualified man adequately trained and experienced in conservation who would be willing to accept appointment in Mr. Cox's place. No such man, he declared, would be willing to make the personal sacrifice necessary no matter how solemn the assurances of the Commission with the possibility and risk of his own Commission suddenly and unexpectedly turning against him and taking steps to oust him before he had had a chance to really get settled in his work.

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this hearing," Mr. Reed asserted, "to remove the present Commissioner on the basis of charges which to an unprejudiced outsider like myself appear frivolous and inconsequential, and also have all the earmarks of having been trumped up merely to conceal some undisclosed motive, is being followed closely by conservation leaders and representatives of national conservation organizations throughout the country."

In filing his report Mr. Cox denied the charges which brought about his suspension. "I contend that the charges, singly or collectively, do not allege any facts which would constitute sufficient cause for my dismissal," he stated. "The charges deal largely in generalities and abound with repetition of irrelevant statements."

The charges are not the work of the Commission as a whole, Mr. Cox declared. "Two members of the Commission, being uninformed of the nature of the charges until the meeting at which they were presented, refused to vote on the resolution. In view of the nature of the charges and of the circumstances under which they were framed and presented, I object to each and all of them on the ground that they do not state facts sufficient to constitute cause for my removal under the law. I therefore demand that the charges be reconsidered by the Commission."

Mr. Cox stated that he was not making a fight for himself but for the cause of conservation. "Whether or not I continue as Commissioner of Conservation is of small consequence," he said. "The question as to whether the Commissioner of Conservation is to have and exercise the authority which the law contemplates and is to be given a free hand and proper support, subject only to general policies laid down by the Commission, in building up a real conservation department to serve the people of Minnesota, or whether he is to be hampered and defeated in every attempt for the betterment of the department by interference of the Commission in administrative details, is a paramount feature."

In response to the charge that he lacked executive ability and skill in conservation work, Mr. Cox pointed out that from 1901 to 1905 he explored land for National Forests, and later was placed in charge of their establishment, being made Assistant United States Forester. He participated in the work of the first conservation congress at the request of President Theodore Roosevelt.

In 1911 he was selected to organize and administer the Minnesota State Forest Service and continued in charge of the service until 1924. In 1925 he was in charge of the Upper Mississippi Wild Life Refuge. In 1929, upon recommendation of the United States Department of Agriculture and various scientific organizations, Mr. Cox was employed by the Government of Brazil to organize and establish a forest service.

In testifying before the State Senate Committee recently ordered to investigate the Conservation Department, Mr. Cox said the principal difference between him and the Commission arose over the Commission's failure to outline a policy for the Department and its interference in administrative details. If reinstated, he testified, he could carry out successfully his plan to reorganize the four divisions in the Conservation Department, harmonizing them and placing them on a more efficient basis.

Other testimony before the special Senate Committee alleged that the State Game and Fish Commissioner, W. D. Stewart, had authorized "by mistake" the illegal seining of 30,000 pounds of fish from a Minnesota lake. The Committee will continue its investigation in an effort to place the Department on a more economic and efficient basis.

## Book Reviews

**FOREST BANKRUPTCY IN AMERICA**, by Lt. Col. George P. Ahern. Published by Shenandoah Publishing House, Inc., Strasburg, Virginia. Price \$2.00.

"Now Col. Ahern \* \* \* has done what has never been done before. In *Forest Bankruptcy in America* he has brought together short accounts of the forest story of each state. The result is very impressive."

Thus Gifford Pinchot in a foreword pitifully gives the breadth and scope of Col. Ahern's book on the forest situation. Further on in his foreword Governor Pinchot sounds the keynote of the conclusions with which the book bristles from beginning to end—forest bankruptcy and the need of public control to stop forest devastation in America.

State by State, Col. Ahern has marshalled information and told the story of forest devastation as it blots the maps of forty-eight states. Back of his chapters are infinite work, the patient sifting through state and federal reports, correspondence with forest officials in every part of the world, compilation of essential data that would bring into bold relief the stark picture of deforestation in the states separately and the nation as a whole.

There are times, Col. Ahern says, when very plain language is needed to arouse people to ask pertinent questions. There can be no doubt but that *Forest Bankruptcy in America* will accomplish that purpose. To those who have been propagandised to believe that all is well with our forest cupboard, Col. Ahern's story will come as a considerable shock in that he does not mince words in building his case of forest depletion versus forest renewal. There will be those who disagree with his conclusion. He will be charged with exaggerating the situation. This does not minimize the value of his work. He has called attention to a forest situation in this country that cannot and must not be glossed over, and he has done it with a vigor and candor that challenge disproof or action.—O. B.

**PENN'S WOODS**, by Edward E. Wildman. Published by the author at 320 Parkway at Twenty-first Street, Philadelphia. 190 pages—Illustrated. Price, \$1.50.

The story of Penn's Woods, as the forests of Pennsylvania have come to be known, is not entirely new. It has been told and retold. But in this unique volume there is something new, something refreshing, something distinctive. In the first place, Penn's Woods have been brought down to Penn's Trees, and the individual tree, particularly in the spotlight of history, is a thing of reverence and eternal delight.

Mr. Wildman begins at the beginning, with the woods as William Penn recorded them, and then looked in on the 1932 edition. What he found is pleasingly presented. Then began the search for the survivors of the primeval forests of Penn's day, and a roster of the Penn Trees in Pennsylvania, Delaware, New Jersey and the eastern shore of Maryland. The historic trees are set aside from the "mere remnants" for effective reference and guide.

Pennsylvanians cannot ignore the real meaning of this work, cannot overlook its historical significance. Those outside the State, if they be fortunate enough to possess a copy, will find new interest in a land where a love for trees is inherent.—E. K.

AMONG THE  
CURRENT PUBLICATIONS

*The American Alpine Journal*, published by the American Alpine Club, 544 West 110th Street, New York City. Notes on mountain climbing in America with descriptions of climbs in Alaska and in the northern Rockies.

*Effect of Partial Cutting in the Virgin Stand Upon the Growth and Taper of Western Yellow Pine*, by Francis X. Shumacher. Bulletin 540, of the University of California, Berkeley. From data collected on the North Fork of the Tuolumne River, in California in 1910 to 1928, the author concludes that greater diameter growth of western yellow pine trees in cut-over stands is offset by greater height growth of trees growing in virgin stands.

*A Study of Taxation in Minnesota with Particular Reference to Assessments of Farm Lands*, by George B. Clarke and O. B. Jesness. Bulletin 277. Shows the inaccuracy of the assessment system as applied to real estate in Minnesota and presents the fundamentals of a better land policy.

*Foods of Some Predatory Fur-Bearing Animals in Michigan*, by Ned Dearborn. Bulletin No. 1. Summarizes the findings of two years' investigation of the food habits of the principal fur-bearing animals of Michigan, including the opossum, raccoon, red fox, coyote, wild cat, mink, weasel, skunk and badger.

*Initial Studies of American Elm Diseases in Illinois*, by Hubert A. Harris, Vol. XX, Article 1, of the Natural History Survey. Prompted by the attention attracted by the Dutch elm disease this bulletin attempts a summary of the principle fungi which attack American elm, and a list of all thus far recorded.

*Soil Erosion in California: Its Prevention and Control*, by Walter W. Weir. Bulletin No. 538, the University of California. This popular presentation of the effect of soil erosion upon the investment of the California farmer suggests contour cultivation for annual crops, strip cropping, tile under drainage, various kinds of terraces, and soil-saving dams as means of control.

*Household Management and Kitchens*. A publication of the President's Conference on Home Building and Home Ownership. 228 pages. Suggestions for planning and reorganizing kitchens and other home work areas, as presented in this report of the President's Conference on Home Building and Home Ownership, if followed out in only a small percentage of the homes of the country, should make material inroads upon the surplus lumber piled in the lumber yards. Kitchen plans are submitted, with more detailed drawings of cabinets, shelves and storage spaces, together with specific recommendations for materials, floor and wall coverings, and heights of working surfaces. This is combined with suggestions for budgeting the family income so as to make the improvements possible.

*Fifty-fourth Annual Report of the North Carolina Agricultural Experiment Station at Raleigh*, contains reports on research in soil erosion on 304 acres within the Statesville Soil Erosion Farm. J. M. Snyder and F. O. Bartel report that among other things they are attempting to determine the variation in runoff and the amount of erosion on a wooded area, a burned over area and on newly cleared ground.

Wood From Tut-Ankh-Amen's  
Shrines Identified

Pieces of wood from the shrines outside the sarcophagus of Tut-ankh-amen have been identified by the Imperial Forestry Institute of Oxford as a true cedar, *Cedrus*, and one of the jujubes resembling *Zizyphus mucronata*, or the siddar of the Sudan. These were put in place about 1350 B. C. and are reported to be remarkably well preserved. Coffins of a later date were made of cedar and sycamore fig.



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## Conservation Calendar in Congress

Published monthly while Congress is in session as a service to the members of The American Forestry Association. This calendar contains bills introduced since March 4.

### BILLS APPROVED

S. 598—ROBINSON—For the relief of unemployment through the performance of useful public work. Approved March 31, 1933.

### NATIONAL FORESTS

H. R. 63—MARTIN—To extend the provisions of the Forest Exchange Act to lands adjacent to the National Forests in the State of Oregon. To Committee on Public Lands March 9.

H. R. 1500—ENGLEBRIGHT—Authorizing appropriations for the construction and maintenance of improvements necessary for protection of the National Forests from fire. To Committee on Agriculture March 9.

H. R. 1504—ENGLEBRIGHT—To enable the Secretary of Agriculture to control emergency insect infestations on the National Forests. To Committee on Agriculture March 9.

H. R. 1505—ENGLEBRIGHT—For the inclusion of certain lands in the Lassen National Forest, California. To Committee on Public Lands March 9.

H. R. 1506—ENGLEBRIGHT—To add certain lands to the Modoc National Forest, in the State of California. To Committee on Public Lands March 9. (H. R. 1507—H. R. 1508.)

H. R. 2858—TAYLOR—To add certain lands to the Pike National Forest, Colorado. To Committee on Public Lands, March 10.

H. R. 2859—TAYLOR—To round out the boundaries of the Uncompahgre National Forest, to protect and develop its resources, and to compensate the Ute Indians for such appropriation. To Committee on Public Lands March 10.

H. R. 2862—TAYLOR—To add certain lands to the Cochetopa National Forest in the State of Colorado. To Committee on Public Lands, March 10.

H. R. 3206—MARTIN—For the exchange of lands adjacent to National Forests in Colorado. To Committee on Public Lands, March 13.

S. 8—BORAH—To add certain lands to the Boise National Forest. To Committee on Public Lands and Surveys, March 9.

S. 319—MCNARY—To extend the boundaries of the Fremont National Forest. To Committee on Agriculture and Forestry, March 13.

S. 581—KING—To provide for the protection of watersheds in and adjacent to National Forests. To Committee on Agriculture and Forestry, March 13.

S. 872—MCNARY—To facilitate the use and occupancy of National Forest lands for purposes of residence, recreation, education, industry, and commerce. To Committee on Agriculture and Forestry, March 13. (H. R. 58.)

### NATIONAL PARKS

H. R. 90—SINCLAIR—To establish the Roosevelt National Park in North Dakota. To Committee on Public Lands, March 9.

H. R. 1638—LUCE—To create a National Park Trust Fund Board. To Committee on Public Lands, March 9.

H. R. 1720—TAYLOR—Making appropriation for the Great Smoky Mountains National Park. To Committee on Roads, March 9.

H. R. 1729—TARVER—To create a national

memorial military park at and in the vicinity of Kennesaw Mountain in the State of Georgia. To Committee on Military Affairs, March 9.

H. R. 2837—WILCOX—To provide for the establishment of the Everglades National Park. To Committee on Public Lands, March 10. (S. 324.)

S. 19—NYE—To provide for the restoration, through exchange, of certain timberlands to the Yosemite National Park, California. To Committee on Public Lands and Surveys, March 10, 1933.

S. 618—LOGAN—Amending the Act establishing Mammoth Cave National Park in the State of Kentucky, so as to include twenty thousand acres. To Committee on Public Lands and Surveys, March 21.

S. 684—To sell the land in Death Valley National Monument to Death Valley Scotty and his partner.

### PUBLIC DOMAIN

H. R. 2835—TAYLOR—To stop injury to the public grazing lands by preventing overgrazing and soil deterioration, to provide for their orderly use, improvement, and development, to stabilize the livestock industry dependent upon the public range. To Committee on Public Lands March 10.

S. 318—KING—Granting certain lands to the State of Utah for use and benefit of the water storage commission of such State and for the use and benefit of the University of Utah. To Committee on Public Lands and Surveys, March 11.

### GRAZING

S. J. Res. 8—CAREY AND STEIWER—Authorizing the fixing of grazing fees on lands within National Forests. To Committee on Agriculture and Forestry March 10, 1933. (H. J. Res. 70.)

### RELIEF

H. R. 1609—HILL—To provide for national defense, agricultural conservation, fertilizer production, navigation, flood control, power distribution, reforestation, industrial development, and unemployment relief by operating the Government properties at and near Muscle Shoals, Alabama, and by developing the Tennessee River, its tributaries and watershed. To Committee on Military Affairs, March 9. (H. J. Res. 79, S. J. Res. 4.)

H. R. 1649—MCLEOD—Authorizing the Reconstruction Finance Corporation to make loans to States, municipalities, and political subdivisions of States for the construction, improvement, or maintenance of public streets and highways. To Committee on Banking and Currency, March 9.

H. R. 4594—CROSSER—To relieve unemployment by providing for the building of check dams and other structures to prevent soil erosion, gullying, floods, and drought by retarding the run-off on watersheds and causing the waters to soak into the ground in order to replenish springs and wells and to restore subsoil moisture. To Committee on Agriculture April 4.

S. 67—CLARK—To permit Reconstruction Finance Corporation loans to cooperative farm organizations. To Committee on Banking and Currency, March 10.

## WILD LIFE

H. R. 5—BACHARACH—For the protection and control of anadromous and shore fishes and other aquatic forms of any State or Territory, and authorizing the Department of Commerce to define the seasons and regulate the manner and conditions under which they may be taken or destroyed. To Committee on Merchant Marine, Radio and Fisheries, March 9.

H. R. 1509—ENGLEBRIGHT—To provide for the destruction and eradication of predatory animals in the State of California. To Committee on Agriculture, March 9.

H. R. 1692—MONTET—To authorize the Attorney General and the Secretary of the Treasury to turn over to State Agencies, for use in the enforcement of laws for the protection of migratory birds, forfeited vessels acquired by the Department of Justice and Treasury Department and no longer needed for official use. To Committee on the Judiciary, March 9.

H. R. 3511—GLOVER—To authorize the creation of a game refuge in the Ouachita National Forest in Arkansas. To Committee on Agriculture, March 15.

## MINING

H. R. 3358—DOCKWEILER—To extend the mining laws of the United States to the Death Valley National Monument in California. To Committee on Public Lands March 14.

## MISCELLANEOUS

H. R. 51—MARTIN—To provide for the acquisition of certain timberlands and the sale thereof to the State of Oregon for recreational and scenic purposes. To Committee on Public Lands March 9. (S. 549.)

H. R. 130—HARLAN—For the creation and maintenance of storage reservoirs in all streams whose waters flow into the alluvial valley of the Mississippi River. To Committee on Flood Control March 9.

## FORESTRY IN CONGRESS

President Roosevelt signed the bill to relieve unemployment through forest work, shortly after 12:30 on March 31. It was the culmination of ten days of struggle an activity started by his message to Congress of March 21 in which he outlined his plan to create civilian conservation corps as a means of employing 250,000 men in simple work in forestry, the prevention of soil erosion, flood control, and similar projects. The message was followed by the introduction of bills in both Houses of Congress.

As outlined by the President this is the first of three types of legislation with which he will attack the unemployment problem. The others include grants to states for relief work, such as are incorporated in S. 812 introduced by Senator Wagner, and a broad public works labor-creating program which remains to be passed by Congress.

Joint hearings before the Senate Committee on Education and Labor, and the House Committee on Labor, whose chairmen are Senator David I. Walsh, and Representative William P. Connery, Jr., each of Massachusetts, were held on March 23 and 24. The new Secretary of Labor, Miss Frances Perkins, in her first appearance at the Capitol, demonstrated her ability to answer questions and defend her ideals. Miss Perkins assured the committee that the bill is primarily for relief and would be administered so as not to interfere with other activities of labor. Further details of

H. R. 1501—ENGLEBRIGHT—To aid in the establishment of State parks. To Committee on Public Lands March 9.

H. R. 1523—FULMER—To provide for research work in connection with the utilization of agricultural products other than forest products. To Committee on Agriculture March 9.

H. R. 1525—FULMER—To divert lands unsuited for profitable agriculture to productive forestry uses. To Committee on Agriculture March 9.

H. R. 1553—LUDLOW—To create a Federal Industrial Commission to aid in the stabilization of employment in industry, agriculture, and commerce. To Committee on the Judiciary March 9.

H. R. 1579—FULMER—To establish and maintain a pecan experiment station at or near the City of Orangeburg, South Carolina. To Committee on Agriculture March 9.

H. R. 1677—MEAD—To provide for the creation of the Saratoga National Monument in the State of New York. To Committee on Public Lands March 9.

H. R. 1719—CROWTHER—To prevent loss of revenue, to provide employment for American labor, and to protect the industries and agriculture of the United States against the effects of depreciation in foreign currencies. To Committee on Ways and Means, March 9.

H. R. 2827—GILCHRIST—To provide for conveying to the State of Iowa certain lands within the nonnavigable meandered lake beds within that State for use as public parks. To Committee on Public Lands, March 10.

H. R. 3833—GREEN—To provide for the payment of one-half the amount of losses sustained on account of the campaign for the eradication of the Mediterranean fruit fly in Florida. To Committee on Agriculture March 20. (S. 1127.)

S. Res. 57—COPELAND—To authorize the publishing of the Copeland report with illustrations. Passed Senate April 3.

the administration and the manner in which 161,000,000 acres of National Forests would serve in the program were described by Chief Forester R. Y. Stuart. He expressed the desire that the bill be broadened to permit work on privately owned land under satisfactory cooperative agreements and where it would serve a national end. The inclusion of such an amendment would permit employing men in the Eastern states in expanding the activities of the Clarke-McNary work, in controlling insect pests such as gipsy moth, forest diseases such as white pine blister rust, and in measures to control floods. He described the great need for protecting the valuable stands of Western white pine in Northern Idaho and the impossibility of doing this satisfactorily if the men are not permitted to work on privately owned land as well as Federal and State lands.

Budget Director Douglas told how the administration plans to use unallotted appropriations which are not to be expended within the next ninety days for carrying on the work. According to Mr. Douglas these amount to about \$150,000,000, of which some \$40,000,000 may be drawn upon before July 1.

How men would be assembled in army camps in each of the nine Army Corps areas, given food and lodging as well as preliminary organization, was described by General Douglas McArthur, Chief of Staff. This aroused doubts in many minds which were voiced by



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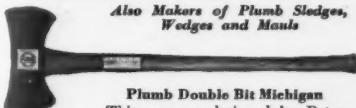
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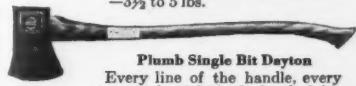
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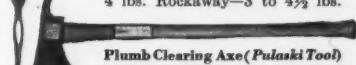
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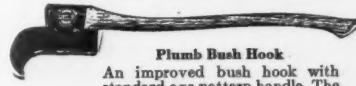


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This tool is made to the standard specifications of the Forestry Service. It is two tools in one: a regular Plumb Axe on one side, and a sturdy 3-inch hoe on the other. It is the perfect tool for grubbing and forest clearing. Furnished only in 3½ lb. weight with 36-inch handle.



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William Green, President of the American Federation of Labor, who declared against the bill on the ground that it would result in the regimentation of labor, would take from the workers the voluntary permission to use their earnings as they might desire, and finally he held out the fear that passage of the bill would brand this Congress as having established \$1 a day for American labor.

Mr. Green's opposition brought about a new

bill organizations, the bill proceeded rapidly through both Houses. Senator Walcott of Connecticut introduced the amendment to extend the provisions of the Act to lands in private ownership for the purpose of doing cooperative work as now provided for by Acts of Congress in preventing and controlling forest fires and the attacks of forest tree pests and diseases. It was quickly adopted.

The Copeland Report (S. 175 of the 72nd

### THE BILL FOR THE RELIEF OF UNEMPLOYMENT THROUGH FORESTRY WORK AS FINALLY PASSED

*Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That for the purpose of relieving the acute condition of widespread distress and unemployment now existing in the United States, and in order to provide for the restoration of the country's depleted natural resources and the advancement of an orderly program of useful public works, the President is authorized, under such rules and regulations as he may prescribe and by utilizing such existing departments or agencies as he may designate, to provide for employing citizens of the United States who are unemployed, in the construction, maintenance and carrying on of works of a public nature in connection with the forestation of lands belonging to the United States or to the several States which are suitable for timber production, the prevention of forest fires, floods and soil erosion, plant pest and disease control, the construction, maintenance or repair of paths, trails and fire-lanes in the national parks and national forests, and such other work on the public domain, national and State, and Government reservations incidental to or necessary in connection with any projects of the character enumerated, as the President may determine to be desirable: Provided, That the President may in his discretion extend the provisions of this Act to lands owned by counties and municipalities and lands in private ownership, but only for the purpose of doing thereon such kinds of cooperative work as are now provided for by Acts of Congress in preventing and controlling forest fires and the attacks of forest tree pests and diseases and such work as is necessary in the public interest to control floods. The President is further authorized, by regulation, to provide for housing the persons so employed and for furnishing them with such subsistence, clothing, medical attendance and hospitalization, and cash allowance, as may be necessary, during the period they are so employed, and, in his discretion, to provide for the transportation of such persons to and from the places of employment. That in employing citizens for the purpose of this Act no discrimination shall be made on account of race, color, or creed; and no person under conviction for crime and serving sentence therefor shall be employed under the provisions of this Act. The President is further authorized to allocate funds available for the purposes of this Act, for forest research, including forest products investigations, by the Forest Products Laboratory.*

*Sec. 2. For the purpose of carrying out the provisions of this Act the President is authorized to enter into such contracts or agreements with States as may be necessary, including provisions for utilization of existing State administrative agencies, and the President, or the head of any department or agency authorized by him to construct any project or to carry on any such public works, shall be authorized to acquire real property by purchase, donation, condemnation, or otherwise, but the provisions of section 355 of the Revised Statutes shall not apply to any property so acquired.*

*Sec. 3. Insofar as applicable, the benefits of the Act entitled "An Act to provide compensation for employees of the United States suffering injuries while in the performance of their duties, and for other purposes," approved September 7, 1916, as amended, shall extend to persons given employment under the provisions of this Act.*

*Sec. 4. For the purpose of carrying out the provisions of this Act, there is hereby authorized to be expended, under the direction of the President, out of any unobligated moneys heretofore appropriated for public works (except for projects on which actual construction has been commenced or may be commenced within ninety days, and except maintenance funds for river and harbor improvements already allocated), such sums as may be necessary; and an amount equal to the amount so expended is hereby authorized to be appropriated for the same purposes for which such moneys were originally appropriated.*

*Sec. 5. That the unexpended and unallotted balance of the sum of \$300,000,000 made available under the terms and conditions of the Act approved July 21, 1932, entitled "An Act to relieve destitution," and so forth, may be made available, or any portion thereof, to any State or Territory or States or Territories without regard to the limitation of 15 per centum or other limitations as to per centum.*

*Sec. 6. The authority of the President under this Act shall continue for the period of two years next after the date of the passage hereof and no longer.*

Approved March 31st, 1933.

draft of the bill from which was deleted all reference to a Civilian Conservation Corps to be enlisted for one year at \$1 a day with subsistence. Instead, broader powers were given the President to carry on the work for two years.

In spite of continued opposition by the La-

Congress) was presented to the Senate on March 31. On April 4, the Senate passed a resolution authorizing the printing of this report in five volumes, with illustrations, as a Senate document.

Although the present session of Congress was called for the primary purpose of effecting

relief measures, many bills of general forest and conservation interest have been introduced. Among these are resolutions introduced by Senators Carey and Steiner, and Representative Taylor, of Colorado, to authorize the fixing of grazing fees on lands within National Forests. Meanwhile the Secretary of Agriculture has started studies to determine ways in which the grazing fees may more definitely reflect the sale value of the stock. With this in mind, it is unlikely that either of the resolutions will be pushed.

Bills introduced by Representatives Hill of Alabama and Rankin of Mississippi, to develop Muscle Shoals on the Tennessee River, include reference to the employment of foresters as well as engineers.

Representative Englebright of California has introduced a bill to annually authorize \$4,500,000 with reductions to \$4,000,000 after the third year for protection roads and trails, range improvements and other works for more adequately protecting the National Forests. This is similar to the Englebright bill of the past two Congresses. He also introduced a bill for the more effective control of insect attacks within the National Forests.

Bills to extend free use permits on National Forests for residential, educational, and other purposes over periods of not more than thirty years and for areas up to eighty acres were introduced by Senator McNary and Representative Martin, each of Oregon. At the same time the bill would more definitely establish the recreational responsibilities of the National Forests. Similar bills have been introduced during previous Congresses and have been favorably reported on by the Secretary of Agriculture.

The establishment of the Everglades National Park in the Southern extremity of the Florida peninsula is again proposed in bills introduced by Senators Fletcher and Trammel, and by Representative Wilcox of Florida. These are identical with the Fletcher bill of the last Congress, which passed the Senate but failed in the House.

Another effort is being made through Senator Nye's bill to add about 8,400 acres of sugar pine timberland to the west side of the Yosemite National Park through exchanges of areas of National Forest timber of equal value in California. This was introduced in the previous Congress and unfavorably reported by the Secretary of Agriculture, because it would take nearly \$2,000,000 worth of timber, and would deprive the several California counties whose timber could be so exchanged of about \$600,000 of allotments for road and school purposes.

A National Park Trust Fund Board consisting of the Secretary of the Treasury, the Secretary of the Interior, the Director of the National Park Service, and two persons appointed by the President for five years each would be authorized according to a bill introduced by Representative Luce of Massachusetts.

A Public Domain bill similar to the Colton bill of the last session was introduced by Representative Taylor of Colorado. This would permit the creation of grazing districts to be administered by the Secretary of the Interior but would require acceptance of the provisions of the Act by each of the several Public Land States and would call for the appointment of State officers to work with the Secretary of Interior.

These bills with others which may be introduced will continue on the Calendar during all of the 73rd Congress. Few of them will be given any consideration during the remainder of the present special session which the Speaker believes may continue until June 1.

### Thousands Receive Nut Seeds

"The American countryside will be richer for the planting of thousands of native nut trees, and thousands of Americans have become participants in this tree planting program because of the nation-wide distribution of nut seeds this spring," says C. A. Reed, chairman of the committee in charge of the National Nut Tree Planting Program and pomologist of the Department of Agriculture. Bundles of requests for seeds have been received daily at the headquarters of the conservation project in The American Forestry Association Building. Shipments have been made in order of receipt to men and women, boys and girls, clubs and societies in practically every state. With every lot goes instructions for planting, literature about the nut tree planting program, and directions for recording plantings in order to receive Certificates of Recognition and Registration and the gold seals for the successful tree planters.

Boy Scouts took advantage of the bumper crop of nuts last fall and gathered from many historic grounds a supply that broke all records. Under the direction of their national council in New York and of the Department of Agriculture, American Walnut Manufacturers' Association, and The American Forestry Association distribution was begun immediately in sections where climatic conditions permitted planting. A large portion of the seeds were stored over the winter for spring planting.

Many of the planters desire to use the seeds on their home property while others plan to plant them on school, park, and camp grounds. A number are establishing historical groves similar to the one in the national capital, where trees descended from those at American shrines are planted. Presidential rows are very popular and as fast as seeds are secured from the homes of the Presidents they are added to these memorials.

### One Million Forest Acres Tax Delinquent in Pennsylvania

About one million acres of Pennsylvania forest land are tax delinquent, according to Dr. E. A. Ziegler, director of the Forest Research Institute, Mont Alto, who has recently completed a study of the idle land situation in the State.

This acreage represents nearly one-thirteenth of the total woodland area of Pennsylvania, and has reverted to the counties by tax title or was advertised for tax sale in 1932. Dr. Ziegler believes that taxes delinquent to 1931 and taxes unpaid in 1932 will raise this figure.

These lands are suitable only for raising timber. Fire protection and reforestation will eventually bring them back to production.

### Record Wyoming Tree Distribution

During 1932, 407,774 trees and shrubs were planted in Wyoming, according to W. O. Edmondson, extension forester. This total, the largest recorded in the State in any one year, includes 240,000 planted in nurseries in about forty towns and cities of the State as George Washington Bicentennial plantings. These are to be set out in one to four years in memorial parks, along highways, and in school and State institution grounds.

Trees distributed in the State by the University of Wyoming under the Clarke-McNary law, from the Northern Great Plains Field Station at Mandan, North Dakota, and by the Central Great Plains Horticultural Investigations Station at Cheyenne, Wyoming, totaled 167,774 during the year. These were used primarily in the establishment of farm shelter belts, windbreaks, and wood lots.



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**Game Value Checked**

A recent report from the United States Forest Service at Ogden, Utah, indicates that in at least one section of the West the income from hunting equals, and probably greatly exceeds, the income from domestic livestock produced in the same area.

The Utah Fish and Game Department and the Forest Service cooperated in establishing checking stations for deer hunters and patrolling the hunting grounds on the Beaver District of the Fishlake National Forest in the southern part of Utah. Each entrant was given a numbered metal tag to be worn on the outer clothing evidencing that he was properly registered. The hunters were also handed two slips—one reciting rules of good sportsmanship, carefulness and camp sanitation, the other blank form for reporting hunting cost data.

"A somewhat incomplete report," says the Forest Service, "shows that 1,942 hunters checked in, fifty-eight per cent of whom got bucks. The 398 hunters who submitted the forms showing the cost of their hunt, spent \$7,864, or an average of \$19.75 each. This indicates a total expenditure of \$38,354 by the 1,942 hunters.

"These data show that Beaver deer herd, estimated to number around 8,000 head, has an immense value, not only because of its meat and the wide distribution it gives the hunters' funds, but because it gets him out into nature's wilds where he finds real sport, health, congenial companions and the things that make life worthwhile. The latter cannot be evaluated in dollars and cents, yet they constitute the deer's greatest worth.

**Big Game Investigation Requires  
700-Mile Snowshoe Travel**

Seven hundred miles on snowshoes in the high mountains lying to the west and immediately under the Continental Divide; in a country uninhabited except by an occasional trapper, a country in which there is no food except for that cached last fall in lonely cabins far back in the trackless wilderness. This is the job just assigned to four rangers on the Flathead National Forest in northern Montana.

To be gone for three weeks to a month, they

will make a survey of big game, including elk, deer and bear, on the headwaters of the Flathead River, it is said.

The four men will not travel together. They will be divided into two parties. One, Henry Thol and Francis June, will cover the country drained by the South Fork of the Flathead and they must travel, it is estimated, four hundred miles on snowshoes before they return again to civilization.

The second party, consisting of Rangers Roy Hutchinson and Dewey Sausley, have a shorter trip before them.

**Going-to-the-Sun Highway**

As a tribute to the Blackfeet Indians, the magnificent scenic motor road through Logan Pass in Glacier National Park will be named Going-to-the-Sun Highway, according to Harold L. Ickes, Secretary of the Interior.

This action, the secretary said, is in accordance with the policy adopted by the late Stephen T. Mather in 1916, the year the National Park Service was established, when three Blackfeet chieftains, Curly Bear, Wolf Plume, and Bird Rattlers, visited him in Washington to request on behalf of their tribe that wherever possible only Indian names be given to features of Glacier National Park.

**Work Relief Funds Support Fire Control in Mississippi**

Three hundred and fifty men in eight northern and central Mississippi counties are receiving funds made available to the State from the Reconstruction Finance Corporation in payment for efforts to suppress forest fires. State Forester Fred B. Merrill plans to have one such man for every 10,000 acres of uncultivable and timbered land in each county. This is comparable to a territory extending about two and a half miles in each direction from his home. The money for carrying out this program is part of the \$3,233,054 which Mississippi has borrowed under Section I of the Emergency Relief and Construction Act of 1932.

The R. F. C. wardens, as they are described, are given a supply of popular pamphlets on forest fires and posters with space for signatures and addresses of about thirty men. These posters serve as a public pledge which is later posted in stores, post offices and other conspicuous places. The R. F. C. warden calls upon every person in his district to explain the losses caused by fire and to get his signature to the volunteer pledge poster. Thus far ninety-eight per cent of the local residents or some 15,000 local residents of the eight Mississippi counties have voluntarily signed the posters and pledged to protect their own and their neighbor's lands, embracing over 3,000,000 acres.

State Forester Merrill reports that since the work started in November, 1932, the monthly distribution of cash and orders for food, medicine and clothing to the R. F. C. wardens has aggregated about \$3,000. The maximum amount received by any one person is \$12 a month. Counties which ordinarily burned over 150,000 acres have reduced the area burned under this intensive educational work to scarcely more than 200 or 300 acres. From every source the State Forester has received reports that land owners clearing up new ground are guarding the fires and preventing them from escaping. In previous years more than one-half of the Mississippi forest fires originated from unintended brush fires. This is proof, according to Mr. Merrill, that "people will do better when they know better."

He described the program as the most intensive forest fire education effort since the Southern Forestry Educational Project of The American Forestry Association.

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# Ask the Forester?

Forestry Questions Submitted to The American Forestry Association, 1727 K St., N. W., Washington, D. C., Will be Answered in this Column. A Self-Addressed Stamped Envelope Accompanying Your Letter will Assure a Reply.

QUESTION: How many Christmas trees are usually packed in an ordinary railroad car?—W. P. W., Massachusetts.

ANSWER: An ordinary box car or open gondola will hold in the neighborhood of 14,000 bundles, each of which contains from one to five trees depending upon their size.

QUESTION: When is the best time to cut live white oak trees for poles to be used in rustic work so that the bark will adhere most firmly?—S. C. J., Wisconsin.

ANSWER: Bark will adhere fairly well if the trees are cut in the late summer, but to avoid insect injury cutting should be postponed until about the first frost. To increase adhesion of the bark, a narrow strip or score should be cut off on two sides of the entire length. The logs should then be seasoned by piling in the shade with thorough air circulation and left to remain until the following spring or summer. The scores, ends, and knots should be painted with coal-tar creosote a few days after the trees are felled and again just before the timbers are used. If this is not done the bark may be tacked to the logs with large-headed nails using one nail to every square foot of surface. This is based on a statement in the United States Department of Agriculture Farmers' Bulletin No. 1660, "The Use of Logs and Poles in Farm Construction."

QUESTION: Kindly send information regarding the commercial raising of mink and muskrat.—A. S. K., Pennsylvania.

ANSWER: This was referred to the Bureau of Biological Survey of the United States Department of Agriculture, who replied: "We would not advise you under present conditions to engage in fur farming on a large scale. The prices paid for raw furs at present are not sufficient to make mink and muskrat farming a profitable undertaking."

QUESTION: What are your suggestions for ornamental shade trees for planting in northern Ohio, near buildings and in the open?—H. M. D., Ohio.

ANSWER: Shade trees suitable for planting near buildings are red oak, pin oak, London plane, tulip, Norway maple. Shade trees suitable for planting in the open are sugar maple, Mossy cup oak, Chestnut oak, Sycamore, White ash, Thornless honey locust, American elm, Basswood, White pine, Norway pine.

QUESTION: Please give a list of State flowers.—J. S. H., North Carolina.

ANSWER: The following list of floral emblems was furnished by The Wild Flower Preservation Society, Inc., 3740 Oliver Street, Washington, D. C.: Alabama, goldenrod; Alaska, forget-me-not; Arizona, giant cactus; Arkansas, apple blossom; California, golden poppy; Colorado, white and lavender colum-

bine; Connecticut, mountain laurel; Delaware, peach blossom; District of Columbia, American beauty rose; Florida, orange blossom; Georgia, Cherokee rose; Hawaii, lehua; Idaho, syringa; Illinois, native violet; Indiana, zinnia; Iowa, wild rose; Kansas, sunflower; Kentucky, goldenrod; Louisiana, magnolia; Maine, white pine cone and tassel; Maryland, black-eyed Susan; Massachusetts, trailing arbutus; Michigan, apple blossom; Minnesota, showy lady slipper; Mississippi, magnolia; Missouri, red haw; Montana, bitter-root; Nebraska, goldenrod; Nevada, sage brush; New Hampshire, purple lilac; New Jersey, violet; New Mexico, yucca; New York, rose; North Carolina, daisy; North Dakota, wild prairie rose; Ohio, scarlet carnation; Oklahoma, mistletoe; Oregon, Oregon grape; Pennsylvania, laurel or columbine; Rhode Island, violet; South Carolina, yellow jasmine; South Dakota, pasque flower; Tennessee, passion flower; Texas, blue bonnet; Utah, sego lily; Vermont, red clover; Virginia, dogwood; Washington, rhododendron; West Virginia, rhododendron; Wisconsin, violet (Birdsfoot preferred); Wyoming, Indian paint brush.

QUESTION: What can you tell me about a disease producing "cedar apples"? Which of the cedars and junipers are susceptible to attack?—O. J. R., Pennsylvania.

ANSWER: The cedar rust which produces "cedar apples" was the basis for a dramatic story entitled "War of the Cedars" by Bissell Brooke, published in AMERICAN FORESTS for June, 1930, page 325. It is a fungus disease appearing alternately on the leaves and fruit of apples and on the leaves of eastern red cedar—*Juniperus virginiana*.

Apparently the only effective way to control the disease on apple trees is to cut down the red cedars for a distance of two to four miles.

Virginia, West Virginia, and New York State have special laws permitting the eradication of red cedars in the proximity of commercial apple orchards.

QUESTION: The Dardenne Club house, located in St. Charles County, Missouri, on the Mississippi River, is in a grove of pecan trees, so old that we have lost several within the last ten years. In efforts to replace them, we have taken pecan trees from an adjoining grove ranging from tiny sprouts to young trees about seven feet high, but all died. Information regarding the time and method of planting of seeds or the transplanting of trees will be appreciated.—W. H. N., Missouri.

ANSWER: Well grown nursery stock of recognized species are recommended rather than sprouts and seedlings. These will have better root systems and will grow more satisfactorily. Furthermore, the nuts from the trees will be superior. The trees may be planted satisfactorily in the spring.

## THE PRESIDENT'S --- REFORESTATION PROGRAM

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### Need of Consolidating Federal Conservation Activities Cited

The need of consolidating and coordinating the Federal conservation activities included in the Bureau of Fisheries, the Biological Survey, and the Forest and Park Services is emphasized in Report No. 1268 of the Special Committee on Conservation of Wild Life Resources which was ordered printed on February 22 and recently made available. These four bureaus represent the bulk of the Federal interest in the great out-of-doors, which the Committee points out constitutes the major portion of the organic group of natural resources. The committee, consisting of Senator F. C. Walcott, Chairman, with Senators Harry B. Hawes, Charles L. McNary, Key Pittman and Peter Norbeck, presents report on its studies which culminated in public hearings on January 12, 13, and 14.

No decision was reached within the committee as to the Department which should administer the four bureaus and no legislative plan was advanced for their coordination.

The discussion in the twelve page report is limited to the organic natural resources which are renewable or replaceable. Conservation of these, the committee reports, embraces the power of reproduction and growth.

The fact that one out of every seven adults in the United States is a hunter or fisherman is an indication of the public interest in the questions involved. These people spend more than \$650,000,000 annually for fishing tackle, ammunition and similar items for enjoying the out-of-doors. A recent survey shows that these sales have increased during the depression.

### Greeley Receives Camp Fire Honor

William B. Greeley, a Director of The American Forestry Association, has been awarded the gold medal of honor of the Camp Fire Club of America in recognition of distinguished service in conservation as Chairman of the Conservation Committee of the Club. The honor was conferred upon Mr. Greeley at a Camp Fire Club dinner in New York on March 17. In addition to his outstanding work in conservation Mr. Greeley has the distinction of having served longer as Chairman of the Club's Conservation Committee than any other individual in its history. He was elected a member of the Club in 1907 and became a member of its Committee on Conservation of Forests and Wild Life from the inception of that Committee in 1909. Dr. William T. Hornaday was the first Chairman of the Committee. He was followed by Charles Coffin, Augustus S. Houghton, and Marshall McLean.

In 1915 on the appointment of George D. Pratt, then President of the Club, Mr. Greeley became Chairman of the Conservation Committee and continued in that position until April 1, 1933, except for a period of one year, during which he served as acting chairman. For a number of years it has been the custom of the Camp Fire Club to award a gold medal of honor each year to a member of the Club who has rendered outstanding or distinguished service to the cause of conservation. Others who have received the honor include: William T. Hornaday, Gifford Pinchot, William Dutcher, organizer of the Audubon Societies, Daniel Beard, Carl Rungius and George D. Pratt.

### Lithgow Osborne New York Conservation Commissioner

Lithgow Osborne, publisher and editor of the Auburn *Citizen-Advertiser*, has been appointed Conservation Commissioner of the

State of New York to succeed Henry Morganthau, Jr.

Active in public affairs for a number of years, Mr. Osborne was appointed secretary to James W. Gerard, Ambassador to Germany, in 1913, and remained with him in Berlin until the United States entered the World War. Subsequently, Mr. Osborne held diplomatic



Lithgow Osborne

posts in other European countries, retiring from the service in 1919 to take up active direction of the *Citizen-Advertiser*.

Mr. Osborne is the son of Thomas Mott Osborne, internationally known penologist, who instituted the honor system while serving as warden of Sing Sing.

John T. Gibbs, secretary of the New York Conservation Department since 1931, has been appointed Deputy Commissioner, succeeding Herbert E. Gaston.

### Oregon Authorizes Forest Loans from R. F. C.

Loans from the Reconstruction Finance Corporation to forest owners in Oregon, under paragraph (a) (4) of section 201 of the act approved by Congress on January 22, 1932, are authorized through enactment of Senate Bill No. 339 by the Oregon State Legislature to become effective June 10.

The Oregon Act authorizes the State Forester to assist in the preparation of plans for the protection and management of forests within the State, and to enter into contracts to supervise the execution of the plans. Should the loans be unpaid and the land revert to the Reconstruction Finance Corporation the State of Oregon consents that after three years, during which it may redeem the property, title to the land may be conveyed to the United States with authorization to administer as a National Forest. Additional authorization is given to acquire adjacent or intervening lands to assist in administration.

The State of Oregon is further authorized by enactment of Senate Bill No. 215 to accept conveyance title to county lands acquired through tax foreclosures. The act becomes effective on June 10, and after June 30 there is no restriction as to the number of acres that may be so acquired. During 1932 some 12,000 acres of county land was offered the State, but was refused because of the necessity of securing an abstract. The new act permits the State to accept title to tax delinquent lands from the counties without the necessity of securing an abstract.

## THE MORNING MAIL

## Selected Comments From The Association's Post Bag

"Congratulations on the Reforestation Bill of President Roosevelt! I read with great interest the dispatch in the *New York Times* telling that you and Mr. Butler were present at its signing. I am sure that I am just as pleased as you are that this fine work which you have advocated so long is at last going to be done. I am also pleased that the foresters, whom I have always found to be the finest type of men, are going to be in charge of the unemployed."—KENNETH HOLLAND, *Executive Secretary, International Student Service, New York City.*

"I read *AMERICAN FORESTS* carefully every month and find it perhaps the soundest conservation magazine of any in the country."—HARRY MC GUIRE, *Editor, Outdoor Life, Mount Morris, Illinois.*

"I knew very little about the trouble in Minnesota and Wisconsin until the letter you sent out to Minnesota members. I want to compliment you and The American Forestry Association for alertness in situations like this and for the will and courage to act."—EMANUEL FRITZ, *University of California, Berkeley, California.*

"It gives us a lot of encouragement to know that The American Forestry Association is taking an active hand in seeing that Minnesota gets a square deal so far as conservation is concerned."—J. P. WENTLING, *Director, Western Red Cedar Association, Minneapolis, Minnesota.*

"The letter to Minnesota members of The American Forestry Association is splendid. In it you take a reasonable, dignified and sensible position."—HENRY SCHMITZ, *University of Minnesota, St. Paul, Minnesota.*

"I am delighted with the April editorial (in *AMERICAN FORESTS*). It tells better than anything else I have seen just what the public needs to know, and few apparently do know, that President Roosevelt understands practically what he is trying to do in the reforestation program."—MRS. FRED H. TUCKER, *Newton, Massachusetts.*

"I certainly thank you for the interest you are showing in our difficulties here (in Delaware) and anything you can do for us will be greatly appreciated."—WILLARD SPRINGER, JR., *Vice President, Industrial Trust Company, Wilmington, Delaware.*

"I received your letter of March 21 in regard to the Delaware Forestry Department. I have made some effort in regard to this legislation and am hopeful that it will not be passed and that the Forestry Department will be retained."—MRS. COLEMAN DUPONT, *Wilmington, Delaware.*

"Thank you for your letter of March 20 with its information about our Tennessee legis-

lative situation here. I shall be pleased to see to it that the legislature now in session hears at least one more voice on this subject."—R. L. HUNT, *General Board of Christian Education, Nashville, Tennessee.*

"If there is any truth in that old-fashioned saying that the man who builds a better mouse trap or better battery will have hard work keeping grass growing around his domicile, you ought to have a lot of well beaten pathways to your door. For you are doing a mighty good job with that magazine of yours. I am a devoted reader of *AMERICAN FORESTS*, and while a rank amateur in this department, I get much stimulation from your work."—CHARLES F. BURGESS, *President, Burgess Batteries, New York City.*

"I am very glad to receive the folder on 'Trail Riders of the National Forests.' This is the kind of project which I have long thought ought to be done and believe that The American Forestry Association has made a good move in taking it up."—AUSTIN F. HAWES, *State Forester of Connecticut.*

"I love *AMERICAN FORESTS* and know that it represents a cause rather than a business."—ARCHIBALD RUTLEDGE, *famous author.*

"The announcement of The American Forestry Association to sponsor a series of tours in the National Forests appears to be a step in the right direction. More Americans are entitled to know intimately the beauties of our West."—ROBERT C. MUELLER, *Managing Editor, Sports Afield.*

"I know of no organization whose services to the cause of conservation are more valuable than those of The American Forestry Association, and I consider it a great compliment to be honored again by selection for the office of Vice-President."—HON. FREDERIC C. WALCOTT, *United States Senator.*

"Your magazine is one of the most welcomed of any received by us. It is very informative and well edited."—L. C. WHITCHER, *General Commercial Manager, New York Telephone Company, New York.*

"I think the Association is doing a fine job and has a splendid standing throughout the country."—S. N. SPRING, *Dean, New York State College of Forestry, Syracuse.*

"The more I see of *AMERICAN FORESTS* the more I believe it to be one of the few really good outdoor magazines."—HORACE MITCHELL, *Haley Publishing Company, Portsmouth, New Hampshire.*



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*In honor of Mother—* WHATSOEVER ye would that others should do for YOUR MOTHER if she were left destitute, do ye even so for other mothers and dependent children, millions of whom today, through unemployment and other causes beyond their control, are suffering, and some of them dying, for lack of the simple necessities of life

### Suggestions for Mothers Day Observance

ILLUSTRATED SOUVENIR BOOKLET, containing poems including new hymn "Faith of Our Mothers", scriptural quotations, classical tributes, suggested programs for churches, clubs, schools, lodges and homes will be sent free of charge upon request. Address:

THE GOLDEN RULE FOUNDATION Lincoln Building, 60 E. 42nd Street, New York, N.Y. Without obligation on my part, send Mothers Day booklet referred to above
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STREET _____
CITY and STATE _____

*This space contributed by  
The American Forestry Association*

## FOREST SITUATION EXPOSED

(Continued from page 206)

ductive use, (2) to meet national requirements for forest products and services, and (3) to obtain the full economic and social benefits of forests. Essential to the accomplishment of these objectives, the report stresses the need of better protection of our forests from fire, insects and diseases. To control forest fires adequately will cost approximately \$32,000,000 or more than double present expenditures. It stresses also the need of assuring the preservation of young seedling growth already on the ground at the time of logging and the leaving of seed bearing trees to reforest the land after logging. Some control of slash disposal and grazing on private lands is also emphasized and a very great extension of conscious forest management must be brought about.

In regard to forest planting, a twenty year planting program is recommended based on the most urgent watershed and forest situations. This program would seek to plant twenty-five million acres, nine-tenths of which are in the East. The cost would approximate \$172,000,000. Action is further programmed to meet contemplated requirements of the country in respect to protection of watersheds, expansion of forest recreation, conservation of wild life, productivity of forest ranges, adequate activities in forest research, stimulation in the use of forest products, with resulting increase in employment.

Public regulation of the lumber industry or the private owner is not advocated except in modified form. The report questions that nation-wide public regulation will accomplish the required ends, but states that some regulation, both by states and the Federal Government, will be necessary as a concurrent effort. The program places first reliance in meeting the forest problem upon public ownership which will bring under assured management by the public approximately one-half the area of forest lands in the country and thereby correct the critical lack of balance in forest land ownership. The principal features of the national plan recommended may be summarized as follows:

1. Expansion of public ownership of forest lands so as to bring under public management slightly more than half of the commercial forest lands, five-sixths of the non-commercial forest lands, three-fifths of the forest ranges, four-fifths of the area of major influence on watershed protection, and eight-ninths of the area to be set aside for forest recreation. This would call for the acquisition of 224,000,000 acres which added to the forest lands already in public ownership would bring public holdings up to approximately 400,000,000 acres. It is recommended that of the additional land to be acquired, 177,000,000 acres be in the East, and 47,000,000 acres in the West. The program would leave for private endeavor in forestation 255,000,000 acres of land especially adapted to commercial timber growing.

2. An expansion of public aid to the states and other private owners based on an equitable adjustment between federal and state government and gauged by public interest.

3. Public regulations that would cover generally accepted requirements, attempt nothing impossible and be available as a reserve measure in case of future public necessity.

4. Federal assumption of only that part of the undertaking which other agencies cannot or will not carry.

The annual cost to the public of carrying out the program recommended, it is estimated, would be as follows:

First five-year period \$117,000,000.  
Second five-year period \$143,000,000.  
Third five-year period \$110,000,000.  
Fourth five-year period \$94,000,000.

Necessary financing would be through appropriations and long term loans at a low interest rate which would afford means for underwriting desirable projects beyond the immediate capacity of treasury income.

## "MOTHER'S" TREES

(Continued from page 207)

to honor the Mother of the Unknown Soldier. A highlight during the beautiful ceremony dedicating this tree was two songs by Madame Ernestine Schumann-Heink, great figure of the music world acclaimed and loved by the people of all nations, not only for her still glorious voice but for the spirit of universal love which emanates from that great mother-heart and which she has so richly demonstrated all during her long public life.

At Fredericksburg, in Virginia, at the tomb of Mary Ball, mother of George Washington, stands another Mother's Tree with national significance. This lovely tree was planted several years ago, on the side of the hill near Meditation Rock, where in the twilight of her life she spent so many happy, quiet hours and which now, as her final resting place, is rapidly becoming one of the most visited of our national shrines.

In addition to these national plantings, Mother's Trees have been planted at the capitals of several of the sovereign states, and by patriotic or other organizations as well as by many schools and private individuals. The spade used in planting the initial tree, now the property of The American Forestry Association, has been sent all over the country, functioning each year in some outstanding ceremony of planting a Mother's Tree. It will be used this year again at Lake Antietam, at the re-dedication of the initial tree on the occasion of its tenth anniversary.

The American Forestry Association urges the planting of white birches on Sunday, May 14th, at all Mother's Day celebrations, wherever practicable. It is something of such special significance and it can be done in as large, or small, a way as is desired. On receipt of detailed reports of such plantings for record, the Association will be glad to issue a planting certificate.

## Pack Forest Awards

Making its fourth annual award of fellowships for training leaders in forestry, the Charles Lathrop Pack Forest Education Board announces its selection of three Americans and two Canadians for the year 1933.

The fellowships were established to encourage men to obtain advanced training to better qualify them for leadership in forestry and in the forest industries.

The successful candidates are:

Walter U. Garstka, instructor in forestry, Penn State Forest School. To make organic analysis of leaf litter, immediately after its fall in the autumn, collected from forests growing on podzolized and brown-earth soils.

Harold R. Hay, graduate student, University of Wisconsin. To make a study of changes in the physical properties and chemical constituency of wood subjected to steam treatments.

John Edward Liersch, junior forester, British Columbia Forest Service. To continue a demonstration begun under Charles Lathrop Pack Fellowship, awarded in 1932, regarding the practicability of economic selection in the Douglas fir region.

Nicholas T. Mirov, graduate student, University of California. To make a study of transpiration by different forest cover species with reference to precipitation and to moisture content of the soil.

Louis Rene Scheult, graduate student, University of Toronto, Toronto, Canada. To make a regional study of forest development.

## THE VALUE OF PEAT MOSS IN TRANSPLANTING TREES

(Continued from page 215)

the heavy clay the breakdown of organic material went on in an apparently normal manner.

Another experiment was designed to study the effect of this product compared with topsoil on trees transplanted under field conditions. In this case nursery grown elms of uniform age and size were planted in a graded street from which all the topsoil had been removed. This soil was sand and gravel. One half of the trees were planted in topsoil and the other half in the sand and gravel mixed with about sixty-five pounds of peat moss per tree. All trees were given liberal quantities of chemical fertilizer at the time of transplanting and again the following year. At the end of three years the twenty-five trees planted in the peat moss mixture had averaged thirty-five per cent better trunk growth than those planted in topsoil.

That the effect of peat moss in inducing rapid and vigorous root growth is not limited to one species of tree is illustrated by the growth of roots in an experimental planting of large black walnut trees. This species is somewhat difficult to transplant and has a root system of a none too fibrous nature. The walnut roots required a somewhat higher soil temperature before starting root growth than the maples or other trees planted at the same time. However, when this temperature was reached, new fibrous rootlets were produced rapidly and in great numbers in a fill made up of subsoil and peat moss.

Because of its porosity, peat moss, partially moistened, supplies a happy combination of air and water which is beneficial alike to the poorly aerated clay soil and to the sandy soil which is well aerated but which tends to dry out rapidly. Its high air holding capacity also indicates its insulating properties when used, as a mulch, to maintain uniform temperatures in the root area.

The effect of uniform moisture, temperature and air in a peat moss treated soil was shown in some experiments with black walnut seedlings. Germinating nuts were carefully selected to secure those showing a uniform length of the emerging root tip. They were planted in laboratory boxes having one glass side to show the entire root system for the first two weeks. One lot was planted in a sandy soil and another in a mixture made up of three parts of similar sand to one part of peat moss. It was assumed that there would be no lack of food, for some time, for roots developing from such large seeds as walnuts. Certainly air could not be lacking in these small boxes of sandy soil. They were all watered well at the time of planting. At no time during the first ten days did the sandy soil appear to be greatly in need of water yet, as the accompanying photographs show, root growth in the peat moss mixture greatly exceeded that of seeds planted in the unimproved soil.

Research data on these planting problems have been supplemented by field observations on a wide range of species and soils and the collection of both types of information is being continued. The evidence at the present time indicates that the peat moss, by reason of its physical properties, offers one of the most suitable of materials readily available for soil building and transplanting purposes.

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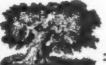
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Three miles of Japanese Cherry Trees in Potomac Park—the most famous memorial trees in the world—have opened the festival with a display of beauty that challenges the imagination. They will be followed by the flowering quince in Anacostia Park, the site of the new "Grove of Trees of Tradition," established by The American Forestry Association.

And then the "City of Trees" will blaze in a green and flowered glory that gives it its greatest charm. The dogwood of Rock Creek Park; the rare trees of Lafayette and Garfield Parks; the great old willows of Potomac Park, descendants of the historic willow from the grave of Napoleon.

There are more than 2,000 different kinds of trees and shrubs in the City of Washington, many of them rare and exotic. The City has more great trees—famous, historical and memorial—than any City in America, if not in the world.

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### NATURE IN THE MOONLIGHT

(Continued from page 203)

of the fact that these children have their own high sense of the fitness of things.

The male swam away alone, on some love-errand bent, and his course brought him near me. I watched him move swiftly to where some tiny yellow flowers grew. A small bunch of these he delicately plucked with his bill, and thus laden he swam back to his sweetheart, to whom he offered the flowers with certain faint sweet croonings. He was saying it with flowers!

This last proof of devotion through the perception of and the observance of a poetic ceremony was too much for the heart of the maiden. I watched them swim away happily together into the green watery wilderness of their wild home, into the argent Eden of their dreams.

I remember one night in October, during the time of the full moon, I was listening to the ecstatic singing of a mockingbird—now on the tiny green spire of a red cedar, and now on the wind in the moonlit sky above it. For curiosity I was trying to identify each of his imitations, given with delirious abandon yet with precise certainty.

The night was very still. During a lull in the concert of the mockingbird, I heard another voice, very high in the heavens; only two notes I heard from the distant voyageur—an upland plover en route from the clover fields of Pennsylvania to the pampas of the Argentine; only two liquid notes, haunting, human, mysterious. Then silence reigned. But a moment later the minstrel of the cedar tree had taken the air again, and was repeating, with the perfect intonation of an artistic mimic, the mournful and musical call of the Bartramian sandpiper, by that time far out over the wastes of the Atlantic. There was a charm about this performance that had in it the spirit of elfland: the lonely plover on his epic journey, the master musician capturing with delight those dewy tones, and repeating them to solace the lyric hunger of his heart.

Perhaps no scene by moonlight ever impressed me more than the one I saw on Sandy Point one April night. I had gone alone to this barrier reef of the Carolina coast to spend the night. In ancient splendor the maned sea-breakers broke on the long glimmering beach. There was something Shakespearean about the aspect of things. I kept thinking of:

*Come unto these yellow sands,  
And all take hands.*

My observation post was a gray sand-dune, where I was partly concealed by whispering beach-grass. Behind me lay a vast expanse of sea-marlshes, stretching away to the dim pine-battlemented mainland. Before me lay the gleaming beach, the lordly ocean—and the fairies in the moonlight! On the wet sands, among the glimmering seashells, I saw gaudy oyster-catchers, graceful willets, tiny sandpipers, tripping along pertly like dapper elves. Above the waves graceful shearwaters beat swiftly, their long black wings glinting in the moonlight. But what attracted me most was the sight of several groups of Wilson plover, just arrived from Brazil.

Each group consisted of a single female and four or five males; and over the shining sands, miles from any human habitation, these gentle and beautiful birds, all the while uttering their plaintive sweet whistle, carried on their immemorial rite of courtship. Pursued by several males, the female would glide coyly ahead of them; and if they did not immediately follow, she would look back, whistling alluringly. As soon as they start forward, she runs on also, now and then turning to one side archly; or, again, permitting all of them to catch up, assuming at the same time an air of pretty submissiveness. At last, perhaps after

a whole week of appraising her beaux, the coquette selects her mate, and they rear their young on those solitary sands.

Whether or not by a provision of nature, a greater number of males than of females of this species arrive first at their breeding-grounds, so that, as the season advances, the debutantes are less exacting, and at last none is lovelorn.

I do not believe that the life of the night is essentially different from the life of the day. But to hear it is like eavesdropping on the concerts of fairyland; and to see it is to part the curtains of wonder that are drawn by the descending day.

### SOME EARLY WILD FLOWERS

(Continued from page 220)

"Flowers have an expression of countenance as much as men and animals. Some seem to smile, some have a sad expression; some are pensive and diffident; others again are plain, honest and upright like the broad-faced sunflower and hollyhock."

If struggling for attainment of goals develops personality, then flowers should have personality. They have carried on for ages the struggle for perpetuation and improvement and the means developed to accomplish their ends are fully as ingenious as those possessed by humans.

"The problems of adapting oneself to one's environment, of insuring healthy families, of starting one's children well in life, of founding new colonies, of the cooperative method of conducting business as opposed to the individualistic, of laying up treasure in the bank for future use, of punishing vice and rewarding virtue—these and many other problems of mankind the flowers have worked out with the help of insects," said Blanchan in his *Wild Flowers Worth Knowing*. A closer examination of a few of our early wild flowers may convince us that the quotation is true and may lead us to learn more about the two thousand to three thousand others that grow on the hillsides, meadows, deep woods and swamps of our states.

"Jack in the pulpit preaches today,  
Under the green trees just over the way."

There is no plausible explanation why nature should contrive a flower of so peculiar a shape unless it be to give his Reverence the proper setting to preach on the text—"Lo, the winter is past; flowers appear on the earth." The pulpit, the sounding board and the congregation are all there. Open a few of the flowers and in some will be found the corpses of insects, flies and gnats that came from maggots that developed in the surrounding decaying vegetation. These flies are the marriage priests of flowers. They carry the pollen from one plant to another. While an executioner of insects, Jack is not insectivorous though he may become so in the course of time. In September or earlier one finds the pulpit gone and Jack developed into a bunch of red berries. Indians cooked these berries and found them appetizing and nourishing. The root of the plant is bulbous and blistfully bitter when eaten raw, though not in the least harmful. After chewing a portion of a raw bulb one never forgets the plant, and he learns why Indians cooked these bulbs with the meat they fed their enemies. The plant is called Indian Turnip and Memory Plant for obvious reasons.

In moist rich woods often where and when Jack does his preaching may be found the great white trillium, *Trillium grandiflorum*. The "tri" in the name means three; in number of leaflets, petals, sepals, pistils and stamens the plant maintains the rule of three or multiple of three. It is held in high esteem by flower gatherers because it is so

lovely and lasts so long in a bouquet, but few flower pickers know that in picking the flower they may kill the plant. In the root stalk is stored the food for the plant of next year. The leaf that manufactures this food is always picked with the flower. For this reason some states protect this flower by legislation. Self-pollination is prevented in this plant by having the stigma mature after the pollen has gone. So insects, chiefly bees, carry pollen from the young plants and leave it on the late maturing stigma. There are many trilliums, some of which are called Wake Robin because the robin and blossom are supposed to appear at the same time. It is fittingly called Wood Lily also.

Maybe you have noticed by this time that early spring flowers have rootstocks in which food is stored that sends the flowers forth early. Earlier to appear than trillium is the bloodroot. It is found in the rich moist cool places in woods and ravines often with a snow drift near supplying it with cold moisture. How so delicate a flower can grow with so harsh a neighbor nearby is hard to understand. But a beautiful leaf enfolds it in a protecting embrace, and when ready to emerge it shoots above the enfolding leaf, sheds its two sepals, spreads its petals for a day and is gone, too lovely to last. In this flower the stigma ripens before the anthers, so pollen must come from older plants, which is the reverse of the trillium. Thus is self-pollination prevented and the vigor and beauty of the plant perpetuated. The fact that it drops its sepals indicates that it belongs to the poppy family. Upon injury the root and stems yield an orange red juice resembling blood. This gives the Latin term "sanguinaria" as a part of its double botanical name. The juice was used by Indians for a vegetable dye and war paint; the root they used as medicine for colds. The early settlers saturated sugar with the juice as a remedy for colds. Indian Paint and Red Puccoon are other names given the plant.

No flower is more gorgeous in its beauty, and more ingenious in its mechanism to prevent self-pollination than the members of the orchid genus, the lady-slipper. The bee pushes himself into the banquet hall and after feasting, struggles for the exit. His

back must brush necessarily against the sticky stigma coming off the pollen he has carried on his head and back from another flower. This done, he continues his exit and hits the anthers and his back and head are again plastered with pollen which he carries to another lady-slipper to repeat the performance. It is a gorgeous banquet hall with bounteous repast, and with the entrance and exit pre-arranged. Months after the banquet a production of abundant seeds insure that more orchids will rise in the land. But of course there must be the banqueters. The beauty of color and the oily fragrance of the flower are attractive enough to entice plenty of banqueters. Legislation protects this flower from the hands of those looking for a millionaire's bouquet. The rootstock usually withers after the flower is picked for like the trillium, the leaves are taken with the flower. It is often a full day's hunt to find a lady-slipper in its native haunt, and having found one the finder can say he knows what grace and beauty are. The month of May was made for lady-slippers and other wild flowers—and trout fishing.

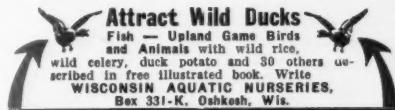
### New State Forester for West Virginia

Hubbard W. Shawhan has been appointed Chief Forester of West Virginia under the Game, Fish and Forestry Commission, to succeed J. W. K. Halliday. For the past sixteen years Mr. Shawhan has been with the William Ritter Lumber Company in charge of the administration of their timber and coal lands in West Virginia and neighboring states. He is a graduate of the Biltmore Forest School and holds the commission of Major, having served in the Sixth Trench Motor Battalion over seas during the World War.

He takes over an organization with nearly 1,800,000 acres of forest land under cooperative plans for forest protection together with about 16,000 acres of State forests and parks. Under him are five districts, each administered by a district forest ranger.

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May, 1933



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**ANNUAL MEETING**

(Continued from page 210)

have been called conservation's show ground in that they represent forestry and conservation progress extending over a period of twenty years. Nowhere in the United States has coordinated land use been carried further or worked out more successfully. Here one may see the results of coordinated land planning, development and use as represented by the White Mountain National Forest, the New Hampshire State Forestry Department, the Society for the Protection of New Hampshire Forests and other organizations. The White Mountain National Forest has the distinction of being one of the first National Forests created in the East, and because of its beauty and interest is a mecca of hundreds of thousands of vacationists.

The field trips will demonstrate the harmonious blending of watershed protection, preservation of esthetic values, timber production and harvest, public recreation and many other uses which this great forest region has been made to serve through cooperative conservation effort. They will provide interesting examples of forestry plantations, fire protection, forest road construction, roadside beautification, development of forest camp grounds and the relationship between the public forests and the intensive private recreational developments and wood using industries.

Among the more outstanding points of interest which the field trips will include are Lost River, the famous reservation of the Society for the Protection of New Hampshire Forests; the State Forest which embraces the Flume, Franconia Notch and the "Old Man of the Mountains," including the interesting recreational developments; Peabody Valley and the Dolly Cop Forest Camp which provided 45,000 camper days of use last year, the Pinkham Notch Huts, a typical Appalachian Mountain Club development occupying National Forest land under special use permit; Tuckerman Ravine Trail, leading to the summit of Mount Washington, one of the most intensively used hiker trails in the region; Gale Region Experiment Area, embracing over 1,300 acres of White Mountain National Forest land, permanently dedicated to research; Wildwood Timber Sale Areas, managed for the production of hardwood lumber and ties; Cherry Brook Sale Areas, under management for the production of spruce and hardwoods; Crawford Notch State Forest, a 6,000-acre protection forest with recreational developments; and Bear Notch and Swift River, outstanding in scenic beauty.

In addition to the major trips, a number of special trips will be organized and conducted for those who desire them, to such points as Mount Washington via the Cog Railway, the Forest Service Lookout Station on Mount Hale, the Federal Fisheries Station at York Pond, and the "natural area" of 510 acres in a deep valley on the east side of Mount White Face where one may see a virgin forest representing the principal forest types of the region.

The meeting will be open to the public and everyone interested in conservation or any phase of the subject is cordially invited to attend. Special rates have been granted for hotel accommodations and will be announced, together with detailed program of the meeting, in the June issue of AMERICAN FORESTS.

**Indiana Tree Planting**

Indiana is planting 750,000 forest trees on ground formerly used as strip coal mines. Three carloads of trees have been shipped from Clark County State Forest Nursery at Henryville, according to State Forester R. F. Wilcox.

**WHO'S WHO**

Among the Authors in This Issue

R. Y. STUART (*That 250,000 Man Job*) has been Chief Forester of the United States Forest Service since 1928. Upon his graduation in 1906 from the Yale Forest School he entered the Forest Service and remained until 1920 when he resigned to become Commissioner of Forestry and Secretary of Forests and Waters of Pennsylvania. In 1927 he returned to the Forest Service as Assistant forester, in charge of public relations.



R. Y. Stuart

JAMES G. NEEDHAM (*Between the Hills and the Sea*) is a naturalist and entomologist at Cornell University, where he received his Ph. D. degree in 1898. Dr. Needham was at one time instructor of biology at Knox College, professor of biology at Lake Forest University, and professor of entomology at Cornell. In 1930 he was awarded the King gold medal for the best work on the fauna of China.

ARCHIBALD RUTLEDGE (*Nature in the Moonlight*) is a well known writer and poet and a conservationist of national repute. He has for many years been a contributor to AMERICAN FORESTS, most of his articles dealing with his beloved "low country" along the southern Atlantic Coast. Mr. Rutledge was born on a plantation in South Carolina but now resides in Pennsylvania. Some of the best known of his books are *Children of the Swamp and Woods*, *Days Off in Dixie* and *Peace in the Heart*.



HOMER L. JACOBS (*The Value of Peat Moss in Transplanting Trees*) is instructor in tree fertilization in the Davey Institute of Tree Surgery, at Kent, Ohio, and research worker in charge of shade tree fertilization.

H. L. Jacobs

WAKELIN MCNEEL (*A Forest Page for Boys and Girls*) has been active for a number of years with boys and girls in conservation work. He now makes his headquarters at Madison, Wisconsin, as Assistant State Club Leader.

OVID BUTLER (*Forest Situation Exposed*) is Editor of AMERICAN FORESTS and Executive Secretary of The American Forestry Association.

LILIAN M. CROMELIN (*A Decade of "Mother's" Trees*) is an Assistant Editor of AMERICAN FORESTS.

B. L. BROWN (*The Cover—The Lair of the Trout*) is official photographer for the Northern Pacific Railway, with headquarters in St. Paul. Mr. Brown has had fifteen years' experience in outdoor photography and has spent the last six summers among the dude ranches of Montana and Wyoming.

